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ABSTRACTS

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Contents

Reproduction & Gynaecological Oncology	12
O1 - Human Papillomavirus in the semen and genital tract of normal fertile men.....	13
O2 - Flow cytometric software for determination of DNA fragmentation in sperm	14
O3 - Risk of stillbirth in uncomplicated singleton term pregnancies following IVF/ISCI.....	15
O4 - No relapse of breast cancer after IVF childbirth	16
O5 - Ovarian cancer characteristics and survival in a defined complete population	17
O6 - Confounders other than comorbidity explain survival differences in Danish and Swedish ovarian cancer patients - A comparative cohort study.....	18
O7 - Sentinel node mapping in women with endometrial cancer	19
O8 - Methylation can predict progression of cervical intraepithelial neoplasia grade 2.....	20
O9 - HPV-test in triage of ASC-US / LSIL - The CIN3+ risk in 5-type HPV E6/E7 mRNA negative women.....	21
Obstetrics & Global Health	22
O10 - A qualitative study on the challenges of providing maternity care in Greek refugee camps	23
O11 - Emotional violence during pregnancy and postpartum depression in Tanzania.....	24
O12 - Intimate Partner Violence among Pregnant Women and Exclusive Breastfeeding.....	25
O13 - Sleeping problems in pregnancy	26
O14 - Guidelines' effect on managing hypertensive disorders at Zanzibar's main hospital	27
O15 - Maternal deaths from hypertensive disorders: lessons learnt	28
O16 - Causes of stillbirth by gestational age: added value of postmortem examination	29
O17 - Influence of postpartum depression on child growth: A cohort study	30
O18 - Childbirth in Swedish women with vaginismus or localised provoked vulvodynia.....	31
Urogynaecology, Global Health & Gynaecological Oncology	32
O19 - Mapping the lack of public initiative against female genital mutilation in Denmark.....	33
O20 - Pelvic organ prolapse in Tanzania – prevalence and risk factors.....	34
O21 - Mobile intervention to increase cervical screening attendance among Tanzanian women	35
O22 - High-grade lesions in relation to reproductive characteristics and HIV status.....	36
O23 - Performance of VIA, HC2 and CareHPV in detection of cervical pre cancerous lesions..	37
O24 - Risk for CIN3+ in women with a negative cervical biopsy.....	38
O25 - Iatrogenic gynecologic fistula; results from a Norwegian national competence center	39
O26 - Pelvic floor muscle training and intravaginal electrical stimulation in women with spinal cord injury: A randomized clinical trial study	40

O27 - No association between native tissue vaginal vault suspension and risk of pelvic pain or sexual dysfunction.....	41
Obstetrics & Fetal Medicine.....	42
O28 - Pregnancy and early childhood outcomes of euploid pregnancies with a high risk in the first-trimester combined screening.....	43
O29 - Validation of the SNP-Based NIPT in Twin Gestations for Zygosity-, Individual-Fetal-Gender-, and Aneuploidy-Determination	44
O30 - Management of suspected primary toxoplasma infection in pregnant women: twenty years of experience of amniocentesis in a low-prevalence population	45
O31 - Effect of maternal hypothyroidism and levothyroxine use during pregnancy on pregnancy and perinatal outcome	46
O32 - Fetal cardiac dysfunction at term gestation in type 1 diabetic pregnancies.....	47
O33 - Metformin treatment of pregnant women with polycystic ovary syndrome - a Nordic RCT	48
O34 - Maternal allergy as an isolated risk factor for early-onset preeclampsia.....	50
O35 - Outcome in monoamniotic twin pregnancies managed primarily by outpatient care.....	51
O36 - Umbilical vein volume blood flow and uterine artery Doppler indices.....	52
General Gynaecology	53
O37 - Fertility outcome after cornual resection for interstitial pregnancies	54
O38 - Physical Activity after Outpatient Total Laparoscopic Hysterectomy: Results from a RCT.	55
O39 - Investigating the loss of work productivity due to symptomatic leiomyoma	56
O40 - Treatment of abnormal uterine bleeding by endometrial ablation: comparison of treatment in two periods.....	57
O41 - Lichen sclerosus and risk of cancer.....	58
O42 - The risk of breast cancer in women with endometriosis	59
O43 - Reduction in teenage pregnancies – a cross-sectional multinational study	60
O44 - The risk of psychiatric morbidity after teenage childbirth and induced abortion	61
O45 - Prescription patterns of COCs - do gynecologists comply with guidelines?.....	62
Obstetrics	63
O46 - Changes in labor outcome after implementing judicious use of oxytocin.....	64
O47 - Discontinuation of intravenous oxytocin in the active phase of induced labour: Cochrane review	65
O48 - Fetal rotation during vacuum extractions; a prospective cohort study	66
O49 - Lateral episiotomy in vacuum-assisted delivery (EVA) - a randomized trial.....	67

O50 - Sonographic prediction of outcome of vacuum deliveries: a prospective, multicenter cohort study	68
O51 - Risk factors for obstetric anal sphincter injury at first and second delivery	69
O52 - Severe fatigue after postpartum haemorrhage treated with intravenous iron	70
O53 - Team up to save lives: video analysis of teams' management of postpartum hemorrhage.	71
O54 - Weight loss reduces recurrence of gestational diabetes mellitus.....	72
Poster.....	74
Global Health	75
P1 - Effects of criterion-based audit on management of prolonged labour	76
P2 - Gestational age determination by last menstrual-period and ultrasound in Tanzania	77
P3 - International accreditation in ObGyn by commercial organisations does not comply with the actual medical ethic framework and should be abandoned	78
P4 - Long-term cardiometabolic effects of pre-pregnancy lifestyle interventions in obese women	79
P5 - Manual vacuum aspiration in the treatment of incomplete abortions in Malawi	81
P6 - MomIT: An innovative ICT-based intervention to maternal weight loss	82
P7 - Pessaries in the management of stress urinary incontinence in Tanzania	83
P8 - Prevention of birth-related perineal trauma and anal and urinary incontinence: results from a criterion-based audit at a referral hospital in Tanzania.....	84
P9 - Urinary-incontinence and delivery circumstances in Tanzania - a population-based study..	85
Obstetrics	86
P10 - A birth plan clinic reduced unnecessary cesarean sections without compromising women's birth experience	87
P11 - Abnormal cervical cytology is associated with preterm delivery	88
P12 - Alternative medicine and intake of fish-oil supplements is common among Danish, pregnant women	89
P13 - Association between mode of delivery and postpartum urinary tract infection	90
P15 - Behaviour and development screening in children at 7 to 10 years of age born after low or mid pelvic vacuum-assisted delivery.....	91
P16 - Breastfeeding and long-term metabolic health: consequence or reverse causality?.....	92
P17 - Caesarean scar thickness in non-pregnant women as a risk factor for uterine rupture.....	93
P18 - Carbetocin or oxytocin for prevention and management of postpartum hemorrhage?	94
P20 - Causes and predictors of postpartum blood loss: a cohort study.....	95
P21 - Cesarean delivery and antibiotics in early childhood do not cause autism	96
P22 - Cesarean section rate and complications at Hospital of Southern Jutland compared with Danish cesarean rate and complications over time.....	97

P23 - Changes in drinking patterns, attitudes towards and knowledge about alcohol consumption during pregnancy in a population of pregnant Danish women	98
P24 - Do elite athletes experience more difficult birth than untrained?	99
P25 - Fibre intake and lifestyle characteristics in relation to constipation and heartburn in pregnancy and pregnancy outcome – a questionnaire- based study	100
P26 - First trimester biochemical markers for early development of preeclampsia.....	101
P27 - Gestational diabetes is associated with an aberrant salivary microbiota composition	102
P28 - Group B streptococci cultured in urine during pregnancy associated with preterm delivery: a selection problem?	103
P29 - Heterogeneity of gestational diabetes (GDM) and long-term risk of diabetes and metabolic syndrome – findings from the RADIEL study follow-up.....	104
P30 - High use of ginger and licorice among Danish pregnant women during the first trimester	105
P31 - Impact of income and traditional risk factors on gestational diabetes	106
P32 - Incidence of postoperative infections after cesarean delivery in Denmark.....	107
P33 - Increased induction of labor rate in obese, results in an increase of operative deliveries?108	
P34 - Increasing the incidence of vaginal delivery in nulliparous women.	109
P35 - Infant outcome after complete uterine rupture.....	110
P36 - Intrapartum PCR assay versus antepartum culture for assessment of vaginal carriage of group B streptococci in a Danish cohort at birth	111
P37 - Intrapartum ultrasound - a learning study	112
P38 - Intrauterine metformin exposure and metabolic health at 8-years of age	113
P39 - Intravenous versus oral iron treatment in pregnancy: a study protocol.....	114
P40 - Is time of quickening affected by maternal BMI, abdominal wall thickness and placental site? A prospective study.....	115
P41 - Keep it down: noise affects our performance	116
P42 - Labour in sensory delivery rooms reduce risk of obstetrical interventions.....	117
P43 - Long-term cognition and behaviour when born early-term – a systematic review	118
P44 - Maternal outcome after complete uterine rupture	119
P45 - Maternal outcome in pregnancies after a complete uterine rupture	120
P46 - Misodel® or Augusta® for induction of labour?	121
P48 - Neuroticism is associated with higher antenatal care utilization in obstetric low-risk women	122
P49 - Neuroticism is not associated with the risk of perinatal outcomes	123
P50 - Number of colony forming units in urine at 35-37 weeks' gestation as predictor of the vaginal load of Group B Streptococci at birth	124

P51 - Outcome in high-risk pregnancies, managed by telemedicine home/self monitoring.....	125
P52 - Outcome in second pregnancy after HELLP syndrome in first	126
P53 - Outpatient induction of labour with low-dose misoprostol – a Danish descriptive cohort study 2015-17.....	127
P54 - Overweight, obesity and hyperandrogenism are associated with gestational diabetes mellitus	128
P55 - Pancytopenia in pregnancy: A Case Report.....	129
P56 - Perinatal outcomes in pregnancies of women with type 1 diabetes	130
P57 - Posterior Reversible Encephalopathy Syndrome in pregnancy - two case reports.....	131
P58 - Prediction of severe complications in nulliparous women at term.....	132
P59 - Predictors of prolonged intensive care unit treatment in severe pre-eclampsia	133
P60 - Prenatal alcohol exposure and risk of Attention-Deficit-Hyperactivity-Disorder (ADHD) in the offspring: a prospective cohort study.	135
P61 - Prenatal exposures and risk for development of PCOS in the offspring	136
P62 - Prevalence and treatment of GBS: risk factors versus intrapartum screening.....	137
P64 - Results after 8 months of implementing intrapartum antibiotic prophylaxis based on intrapartum GenomEra® PCR assay for group B streptococci	138
P65 - Risk evaluation during prenatal care.....	139
P66 - Risk factors for preterm delivery among early onset cancer survivors	140
P67 - Risk-based screening combined with a PCR-based test for group B streptococci diminishes the use of antibiotics in laboring women.....	141
P69 - Self-detection of preeclampsia by automatic image processing of smartphone videos	142
P70 - Severe spastic cerebral palsy declined at term in Denmark 1999-2007	143
P71 - Short term complications after planned cesarean delivery without medical indication. ...	144
P72 - Simulation training in intra-partum assessment of fetal head improves accuracy	145
P73 - Spontaneous pneumomediastinum and subcutaneous emphysema postpartum in primipara	146
P74 - Study design in obstetrics – a methodological challenge. Incidence of relevant obstetric events and tentative sample size calculations.....	147
P75 - The buddy study - a peer support programme after adverse events	148
P76 - The Childbirth Experience Questionnaire (CEQ) - validation of its use in Denmark.....	149
P77 - The effect of light versus strict activity restriction in threatened preterm deliveries – a randomised controlled pilotstudy; The ELISTAR study	150
P78 - The effect of parity on risk of complications in women with epilepsy: a population based cohort study	151

P79 - The impact of tight antihypertensive treatment of true hypertension with white coat hypertension untreated in pregnant women with preexisting diabetes	152
P80 - The macronutrient preload method in gestational diabetes (GDM) - study of Preload® Balance usability and compliance.	153
P81 - The role of decidual Nrf2-expression in preeclampsia and fetal growth restriction	154
P82 - Time interval from elective cesarean section to severe complications	155
P83 - Urinary plasminogen excretion may contribute to preeclampsia pathophysiology.....	156
P84 - Wound infection, dehiscence and risk of early secondary reconstruction following obstetric anal sphincter injury (OASIS).....	157
Fetal Medicine.....	158
P85 - A Scandinavian Cooperation: Incidence, prenatal detection rate and pregnancy outcome of spina bifida in Denmark compared to Sweden.....	159
P86 - Birth weight variants are associated with variable fetal intrauterine growth from 20 weeks of gestation.	160
P87 - Blood pressure in pregnancy as independent predictor for child health.....	161
P90 - Evaluation of fetal cardiac function by electronic spatiotemporal image correlation (eSTIC)	162
P91 - Fetal heart rate variability with hypoxaemia.....	163
P92 - Impaired RAAS, sodium balance in pregnancy and offspring cardiometabolic health.....	164
P93 - Inadvertent Foetal Exposure to Methylene Blue in the First Trimester	165
P94 - Metformin exposure during pregnancy alters the fetal venous liver circulation	166
P95 - Non-invasive fetal electrocardiography (fECG) in gestational week 32.....	167
P96 - Reference values for pH in umbilical cord arterial and venous blood and Apgar score from 34 to 42+ gestational weeks.	168
Reproduction	169
P98 - Changes in human chorionic gonadotropin (hCG) as a predictor for live birth among women with recurrent pregnancy loss (RPL).....	170
P99 - Chronic endometritis in women with recurrent pregnancy loss	171
P100 - Does coffee consumption impact on a successful fertility treatment?	172
P101 - Gestational variation in the maternal serum cytokine profile during first half of pregnancy	173
P102 - Impact of uterine fibroids on fertility.....	174
P103 - No effect of endometrial scratching before second IVF	176
P104 - Ovulation Induction with Clomiphene Citrate and its Outcomes	177
P105 - Proportion of thyroid disorders among women referred for fertility treatment.....	178

P106 - Risk of miscarriage in women conceiving after medically assisted reproduction (MAR) with an ultrasound verified live pregnancy at gestational week 7	179
P107 - Size matters – Placement of differently sized levonorgestrel intrauterine systems.....	180
P108 - Testicular damages after testicular sperm retrieval evaluated histologically in a ram model	181
P109 - Violence during pregnancy and maternal health, birth-outcomes in Vietnam	182
P110 - What do fifteen-year-old pupils know about contraception?	183
General Gynaecology	184
P111 - 3-dimensional versus conventional laparoscopy for hysterectomy: a randomized clinical trial	185
P112 - Chronic vulvar pain among gynecological outpatients	186
P113 - CO2 laser for vaginal atrophy: Efficacy and side effects.....	187
P114 - Complex non atypical hyperplasia and the subsequent risk of carcinoma, atypia and hysterectomy during the following 9-14 years.	188
P115 - Effects of a structured basic course on learning colposcopy.....	189
P116 - Enterobius Vermicularis in a 14-year-old non-sexually active female.....	190
P117 - Gynecological alarm symptoms: Lifestyle, socioeconomic status and contact to GP/gynecologist	191
P118 - Hysteroscopic Mechanical Tissue Removal for treatment of intrauterine pathology in outpatient setting: An observational study	192
P119 - Medical treatment of rectal endometriosis: symptoms and quality of life	193
P120 - Myocardial Infarction in Women with Polycystic Ovary Syndrome	194
P121 - Nausea and vomiting of pregnancy: increased risk with affected relatives.....	195
P123 - Open Surgical Experience amongst Gynaecologists in the Scandinavian Countries	196
P124 - Oral contraceptives for the treatment of primary dysmenorrhea. An updated Cochrane review	197
P125 - Ovarian lesion developing during and disappearing after 12-week ulipristalacetate treatment.....	198
P126 - Predicting low compliance to follow-up and IUD insertions after first trimester medical termination of pregnancy.....	199
P127 - Radiofrequency Ablation for Uterine Myomas: Long-term Clinical Outcomes and Reinterventions	200
P128 - Reducing the examination time and optimising a gynaecological examination with a new concept of a pelvic examination chair	202
P129 - Safe in-bag laparoscopic morcelation of myomas and large uteri	203
P130 - Surgical treatment of endometriosis; a 5-years hospital cohort	204

P131 - The First 200 patients in the Finnish sexual assault referral center – demographics and clinical findings	205
P132 - The gynecological patient's attitudes towards the pelvic examination	206
P133 - The role of office hysteroscopy with the vaginoscopic approach in women with an intact hymen.....	207
P134 - Two incidents of decidual cast as a side effect of hormone therapy - a case report.....	208
P135 - Ultrasound-guided radiofrequency ablation of uterine fibroids: short-term evaluation. .	209
P136 - Ureter lesions due to benign gynaecologic surgery; a 10-year hospital cohort.....	211
P137 - Using virtual-reality simulation to ensure basic competence in hysteroscopy.....	212
P138 - Uterine fibroid incidence among Finnish women: an MRI screening study	213
P139 - Validity of pre-operative self-reported weight in gynecological patients	214
P140 - Women with premenstrual dysphoria show right-sided dominance of frontal blood-flow.	215
Urogynaecology	216
P141 - A Danish national population-based cohort study of midurethral slings, 2007-2011	217
P142 - Excluding vaginal birth - what would the demand for incontinence prolapse surgery be?	218
P143 - First-line treatment of pelvic organ prolapse	219
P144 - Long-term goal achievement after a tension-free vaginal tape operation.	220
P145 - Long-term outcome after late repair of the anal sphincter secondary to obstetric trauma.	221
P146 - Mid-Urethral Sling Complications Continue to Occur 16 Years after Operation	222
P147 - Obstetric perineal wound infection and dehiscence: a prospective cohort study.	223
P148 - Pelvic organ prolapse and other urogynecologic issues in women with spinal cord injury	224
P149 - Pelvic organ prolapse surgery after vault suspension during hysterectomy – An observational study.....	225
P150 - Rate of recurrent apical prolapse after high uterosacral ligament suspension.....	226
P151 - Risk of unanticipated abnormal pathology at the time of and after uterine sparing pelvic organ prolapse (POP) surgery.	227
P152 - Tension-free vaginal tape – clinical outcomes and risk factors for recurrence	228
P153 - The performance of the question “vaginal bulging” in nulliparous women.....	229
P154 - Treatment of urovaginal fistula by catheter drainage; a national competence-centre-cohort	230
P155 - Vaginal pessaries in the management of symptomatic pelvic organ prolapse in rural Kilimanjaro, Tanzania: a pre-post interventional study.....	231

Gynaecological Oncology	232
P156 - Burden of HPV-caused cancers in Denmark and the potential effect of HPV-vaccination	233
P157 - Clinical course of untreated cervical intraepithelial neoplasia grade 2 under active surveillance - a systematic review and meta-analysis	234
P158 - Costs and consequences of introducing robotic surgery for women with gynecological cancer	236
P159 - High risk Human Papilloma virus in Tanzania-risk factors and type distribution	238
P160 - HPV prevalence and HPV-related dysplasia in elderly women	239
P161 - Impact of HLA-G on the outcome of genital and oral HPV infections in women	241
P162 - Improved survival for Danish women with advanced epithelial ovarian cancer treated in gynecological-oncological tertiary centers.	242
P163 - Nationwide introduction of robotic surgery for endometrial cancer reduces complications	243
P164 - Risk factors of epithelial ovarian carcinomas among women with endometriosis: a systematic review	244
P165 - Risk of endometrial cancer in women with endometrial hyperplasia	245
P166 - The best are the worst: Computer adaptive testing of physical health after robotic cancer surgery.....	246
P167 - Uterine endometrioid adenocarcinoma with a co-existing non-gestational choriocarcinoma	247
Other.....	248
P168 - A national needs assessment to define curricular content for simulation-based training in gynecology and obstetrics	249
P169 - Attitude toward emergency contraceptive pill and intention to use condoms in Korean male university students	250
P170 - Claims for compensation after gynecological treatment in Norway	251
P171 - Conception and delivery-plan for Nordic electronic textbook of gynecology & obstetrics	252
P172 - Different stress responses by healthcare professionals during simulated medical emergencies.....	253
P173 - Early detection of substance use in pregnancy.....	255
P174 - Effect of oxidative stress on sperm cells investigated by label-free Quantitative Phase Microscopy.....	256
P175 - Evidence of no association between HPV and breast cancer.	257
P176 - Language Skills and Level of Experience among Arabic-Speaking Healthcare Interpreters in Denmark; an Explorative Study	258

P177 - Simulate anywhere - Design of simulation-based medical education and advantages and disadvantages of in situ simulation versus off-site simulation	259
P178 - Simulation in obstetrics – a survey of practice in Denmark.....	260

Reproduction & Gynaecological Oncology

O1 - Human Papillomavirus in the semen and genital tract of normal fertile men

Reproduction

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Introduction/Purpose: The prevalence of HPV in semen has been found to range from 3%-36% in fertility clinic attendees, and 16%-26% in semen donors. We want to test the hypothesis that seminal HPV positivity may be due to “contamination” of HPV from the body surface during ejaculation.

Methods: Forty-three proven fertile men (mean age: 41 y; mean sperm concentration: 92 mio/mL) undergoing vasectomy were examined for presence of HPV on the genital skin, in an ejaculate, in the scrotal parts of *Vasa deferentia*, and in one testis.

The swab was taken from the entire penile surface and anterior half of the scrotal surface. The ejaculate was produced at home and brought in a plastic container. The testicular biopsy was taken using a 14G TruCut gun needle, and the *Vasa deferentia* pieces were cut from the ½-1 cm removed routinely by vasectomy. All samples were analyzed for HPV using the InnoLipa HPV assay (Fujirebio, Belgium).

Results: HPV was detected in the semen of 15 men (35%), on the skin of 28 men (65%), in the *Vasa deferentia* of 3 cases (7%), while no testis tissue samples were HPV positive. In 13 men (87%) with HPV-positive semen samples HPV was also detected in the skin swap, and in 11 men (73%) identical HPV types were found in the two locations.

Conclusions: The finding that HPV in the semen was usually associated with HPV on the penis and scrotal skin supports the hypothesis that HPV in the semen may originate from contamination from the body surface during ejaculation.

O2 - Flow cytometric software for determination of DNA fragmentation in sperm

Reproduction

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Introduction/Purpose: Reduced fertility is often seen when the spermatozoa has an increased amount of DNA fragmentation. Analysis of the DNA fragmentation Index (DFI) can thus be used as a predictive value for the male fertility potential. The patented sperm chromatin structure assay (SCSA) is widely used for analyzing the flow cytometric output when determining the DFI in spermatozoa. It is not known if non-licensed software has an equal predictive value for a successful outcome after intrauterine insemination (IUI) or spontaneous pregnancy.

Methods: Samples (265) from fertility patients and sperm donors were collected. DFI was analyzed using a strict protocol using acid followed by acridine orange. DFI was determined by SCSA (SCSA-DFI) and FACSDiva6.1.3 (FC-DFI), respectively and the DFI results were compared. Furthermore, pregnancy (either spontaneous or after IUI) was registered during the following 6 months for the fertility patients (137). Subsequently, data from the two software analysis methods were compared.

Results: DFI from the two methods showed moderate association. Pregnancy rates per cycle were similar when SCSA-DFI and FC-DFI were below 20. When DFI increased, a large discrepancy between the predictive value of pregnancy rates were seen culminating when DFI reaches above 30 was SCSA-DFI predicts a 22.5% chance of pregnancy and FC-DFI predicts a 5% chance of pregnancy.

Conclusions: Results show that regular flow cytometric software for determination of DFI can be used as an efficient predictive tool when assessing the male fertility potential and subsequently a reduced chance of pregnancy in their partner, either spontaneously or after IUI.

O3 - Risk of stillbirth in uncomplicated singleton term pregnancies following IVF/ICSI

Reproduction

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Introduction/Purpose: Pregnancies following *in vitro* fertilization (IVF) and intracytoplasmic sperm injection (ICSI) have consistently been associated with increased risk of pregnancy complications including stillbirth. However, for the uncomplicated majority of IVF pregnancies the risk of stillbirth remains unknown.

Methods: We designed a register-based cohort study including all uncomplicated pregnancies with non-induced, intended vaginal delivery in Denmark from January 1, 2003 to December 31, 2013. After exclusion of preterm births, multiple pregnancies, pregnancies of women 40 years or older, and women with a BMI of 35 or more, hypertensive disorders, preeclampsia, eclampsia, HELLP, diabetes, immunization, or induction of labour (unless due to stillbirth) the study population comprised 426,701 pregnancies.

Results: Compared to spontaneously conceived, uncomplicated term pregnancies, the risk of stillbirth among pregnancies following IVF/ICSI was increased in an adjusted logistic regression model (Odds Ratio, 95% CI: 2.1 (1.4; 3.1)). Using gestational age specific cox regression, the risk of stillbirth among IVF/ICSI pregnancies was increased from gestational week 37+0 (Hazard ratio (HR) (95% CI): 2.4 (1.6; 3.6)), from gestational week 38+0 (HR (95% CI): 2.3 (1.5; 3.6)), from gestational week 39+0 (HR (95% CI): 2.5 (1.5; 4.1)), from gestational week 40+0 (HR (95% CI): 3.0 (1.7; 5.2), from gestational week 41+0 (HR (95% CI): 2.3 (0.9; 5.9), and from gestational week 42+0 (HR (95% CI): 6.8 (1.3; 37).

Conclusions: Compared to spontaneously conceived pregnancies, the risk of stillbirth was increased in uncomplicated term pregnancies following IVF/ICSI. Although the etiology remains unsettled, obstetrical assessment may be appropriate prior to term.

O4 - No relapse of breast cancer after IVF childbirth

Reproduction

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Introduction/Purpose: Breast cancer is the most common type of cancer in women and 10% are of childbearing age when diagnosed. Some may develop subfertility due to cancer treatment and will need IVF. Pregnancy and childbirth after breast cancer have been shown to be safe, but it has not been studied whether IVF, including ovarian hyperstimulation and elevated estrogen levels, increase the risk of relapse of breast cancer. We aimed to study if there is any association between IVF and such a risk.

Methods: By using national Swedish register data, we identified all women diagnosed with breast cancer during their fertile years (20-44), between 1982 and 2014. Each woman who subsequently delivered after IVF was matched, according to size of the tumor and year of diagnosis, with four women who had given birth after spontaneous conception (control group). Relapse was defined through a coding template based on new events in the National Patient Register.

Results: Among 37 women who delivered after IVF, eight had undergone fertility preservation before the start of cancer treatment. There was no relapse in the IVF group, compared with 36/148 (24.3%) in the control group. Follow-up time after diagnosis was in mean 10.6 years (SD 4.3). Positive lymph nodes and estrogen receptor positivity at the primary diagnosis was poorly reported and thus inconclusive regarding difference between groups.

Conclusions: Based on the selection of patients accepted for IVF after breast cancer, the ovarian hyperstimulation does not seem to imply an increased risk of relapse compared with spontaneous conception.

O5 - Ovarian cancer characteristics and survival in a defined complete population

Gynaecological Oncology

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Introduction/Purpose: We present a decade-long overview of ovarian tumor in Iceland, a high-resource country with a small homogenous population.

Methods: We included all women with ovarian, Fallopian tube and peritoneal cancer for the years 2005-2014 in the Icelandic Cancer Register, cross-checked for completeness at the one tertiary hospital where treatment is centered. Staging, surgical/medical treatment, pathology, residual tumor, recurrences, follow-up was from medical records. FIGO staging was used. Group comparisons and Kaplan-Meier survival analysis with multivariate logistic Cox regression was used to estimate effects of individual variants on survival.

Results: There were 302 patients; 242 with ovarian cancer. Median diagnostic age was 63 years (range 19-98 years), but 66 for invasive and 55 years for borderline tumors ($p < 0.001$). Stage I applied in 112 women (41%), 18 had stage II, 128 (47%) stage III and 14 stage IV. Of ovarian epithelial cancers 61% were stage III. Operative treatment was radical for 58%, with additionally 10% having < 2 cm of tumor left. Five-year survival was 52% (95%CI: 47-59%); 10-year survival 40% (95%CI: 34-48%). Of women who suffered recurrence 91% had it within three years. Age, residual tumor, histological type, stage and location of largest mass had each an independent and significant effect on survival. Hazard ratio of residual tumor < 2 cm was 2.59 ($p < 0.01$) and for > 2 cm 3.60 ($p < 0.001$) compared to no residual tumor.

Conclusions: The main results on ovarian cancer were comparable to similar countries. A strength is the completeness of the material, including follow-up centralized/co-ordinated from one unit.

O6 - Confounders other than comorbidity explain survival differences in Danish and Swedish ovarian cancer patients - A comparative cohort study

Gynaecological Oncology

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Introduction/Purpose: Danish ovarian cancer (OC) patients have previously been found to have worse prognosis than Swedish patients, and comorbidity has been suggested as a possible explanation for this survival difference. We aimed to investigate the prognostic impact of comorbidity in surgically treated OC patients in Denmark and Sweden.

Methods: This comparative cohort study was based on data from 3118 surgically treated OC patients diagnosed in 2012-15. The Swedish sub-cohort (n=1472) was identified through the Swedish National Quality Register of Gynecological Surgery, whereas the Danish sub-cohort (n=1646) originated from the Danish Gynecological Cancer Database. The clinical databases have high coverage and similar variables included. Comorbidity was classified according to the Ovarian Cancer Comorbidity Index and overall survival was the primary outcome. Data were analyzed using Kaplan Meier and Cox regression analyses. Multiple imputation was used to handle missing data.

Results: We found comparable frequencies of the following comorbidities: Hypertension, diabetes and 'Any comorbidity'. Arteriosclerotic cardiac disease and chronic pulmonary disease were more common among Swedish patients.

Univariable survival analysis revealed a significant better prognosis for Swedish than for Danish patients (HR 0.84 [95% CI 0.74-0.95], $p<0.01$). In adjusted multivariable analysis, Swedish patients had non-significant better prognosis compared to Danish patients (HR 0.91 [95% CI 0.80-1.04], $p=0.16$). Comorbidity was associated with survival ($p=0.02$) but comorbidity did not explain the survival difference between the two countries.

Conclusions: Danish OC patients have a poorer prognosis than patients in Sweden but the difference in survival seems to be explained by other factors than comorbidity.

O7 - Sentinel node mapping in women with endometrial cancer

Gynaecological Oncology

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Introduction/Purpose: Sentinel node (SN) mapping has proved safe in early stage low-risk endometrial cancer. However, the SN mapping technique has not been widely implemented for this patient group in Denmark and the effect on chronic complications and quality of life has yet to be evaluated.

The aim of the present study is to safely implement this more conservative surgical approach to patients with early stage endometrial cancer. The objectives are to evaluate:

1. The effect of SN mapping on the incidence of lymphedema in women with early stage endometrial cancer.
2. The feasibility of applying the SN mapping technique in combination with F-18-FDG-PET/CT imaging in women with high-risk histology endometrial cancer.

Methods:

1. Patients with early stage low-risk endometrial cancer are eligible for an observational study where SN mapping is performed instead of radical pelvic lymphadenectomy. The effect on the incidence of lymphedema and quality of life will be assessed using patient reported outcome measures before then prospectively up to 3 years following surgery.
2. Patients with high-risk endometrial cancer are eligible for an observational study using SN mapping combined with F-18-FDG-PET/CT imaging to assess their combined accuracy in lymph node metastases assessment.

Results: Four gynaecologic oncology centres in Denmark are participating in this project. Two centres have completed the pilot study where a total of 70 patients were included, showing an overall SN detection rate of 94.3%, hereof 74.2% bilaterally. Inclusion in Study I and II is proceeding as planned.

Conclusions: This project may have substantial significance in changing the national treatment strategy of endometrial cancer patients.

O8 - Methylation can predict progression of cervical intraepithelial neoplasia grade 2

Gynaecological Oncology

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Introduction/Purpose: An accurate prognostic biomarker to distinguish HPV-infected women at risk for progression to cervical intraepithelial neoplasia grade 3 (CIN3) or cancer from those who will regress spontaneously without treatment would change the outline of future cervical cancer screening programs. We investigated the ability of a DNA methylation biomarker panel (the predefined S5-Classifer, composed of *EPB41L3* and HPV targets) to discriminate between progression and regression among women with CIN2.

Methods: Pyrosequencing methylation assays were run on exfoliated cervical cells from 149 women enrolled in our study of expectant management of CIN2 in young (18-30 year old) women, in the colposcopy clinic of Helsinki University Hospital, University of Helsinki, Finland (ISRCTN91953024).

Results: A total of 25 women progressed to CIN3+, 88 women regressed to <CIN1, and 36 women persisted (CIN1/2). S5 showed significantly increased sensitivity compared to Pap cytology (cut-point $\leq$ ASCUS vs LSIL+; in contrast a cut-point of NILM vs ASCUS+ was essentially non-specific for progression) in the clinical outcome comparison of regress vs. persist/progress. With both tests set at a specificity of 38.6% (95%CI 28.4-49.6) the sensitivities were 83.6% (95%CI 71.9-91.8) for S5 and 62.3% (95%CI 49.0-74.4) for cytology $\geq$ HSIL ($p=0.005$). The highest area under the curve (AUC) was 0.735 (95%CI 0.621-0.849) achieved in the progress vs regress clinical outcome group with a combination of S5 and cytology $\geq$ HSIL ($p=0.03$); HPV16/18 genotyping did not provide any additional prognostic information.

Conclusions: DNA methylation testing in combination with cytology $\geq$ HSIL could be a useful triage algorithm for women at risk of progression to CIN3.

O9 - HPV-test in triage of ASC-US / LSIL - The CIN3+ risk in 5-type HPV E6/E7 mRNA negative women

Gynaecological Oncology

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Introduction/Purpose: To compare the risk of CIN3+ among women who had a normal cytology (non-exposed cohort) at study start with women who had a negative 5-type HPV mRNA test in triage of ASC-US/LSIL (exposed cohort). A three year CIN3+ risk below 2.0% is considered acceptable to recommend return to routine screening.

Methods: After exclusion of women who had a previous history of CIN1+ and HSIL, we identified 1063 women who had an HPV mRNA negative triage of ASC-US/LSIL over the years 2006 through 2011, and a control cohort of 25 948 women who had a normal cytology during 2006/2007. All women, aged 25-69 at study start, were followed through December 31, 2014. The HPV test targeted E6/E7 mRNA from the types HPV16, 18, 31, 33 and 45 (PreTect HPV-Proofer).

Results: The crude cumulative proportion of CIN3+ were 0.24% (95% CI: 0.17-0.31) and 0.73% (0.60-0.86) at 42 and 78 months of follow-up for the non-exposed cohort, and 1.45% (0.55-2.4) and 2.6% (0.94-4.3) for ASC-US/LSIL. The exposed cohort had significant more extensive follow-up than the control cohort. Over the entire study period 20 cervical cancers were diagnosed in the non-exposed cohort (incidence 8.4 per 100 000 woman-years) compared to none in the exposed cohort.

Conclusions: Women who have a negative mRNA-test for HPV16, 18, 31, 33 and 45 at triage for ASC-US/LSIL have low risk for CIN3 within the first two screening intervals after triage, and may return to screening at 3-year interval.

Obstetrics & Global Health

O10 - A qualitative study on the challenges of providing maternity care in Greek refugee camps

Global Health

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Introduction/Purpose: The European refugee crisis is in a critical stage of transition from emergency humanitarian relief to long-term state provided care. For pregnant refugees, this has resulted in a complex partnership of shared maternity care between humanitarian and development organisations, the Greek national healthcare system, and European multi-state initiatives. Women refugees, particularly during pregnancy, are known to be a vulnerable population group. The aim of this study is to understand the challenges to providing maternity care in Greek refugee camps.

Methods: Observational study of maternity service delivery in five refugee camps over a one-month period, as well as qualitative analysis of semi-structured interviews conducted with healthcare professionals working with pregnant refugees. Interviews were transcribed and later analysed with inductive and then pattern coding.

Results: Twenty-one healthcare providers were interviewed and field notes taken from observational study of services in five refugee camps.

Conclusions: Maternity healthcare providers describe difficult cross-cultural communication to be their biggest challenge to caring for pregnant refugee women. Additionally, the limited availability of female only safe-spaces is identified as a barrier. Lastly, staff report shortcomings caused by the Greek economic crisis that impact on their ability to provide care. Partners involved in providing maternity care to refugees should look to tackle these key issues as they seek to provide care to this population.

O11 - Emotional violence during pregnancy and postpartum depression in Tanzania

Obstetrics

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Introduction/Purpose: This study aimed to determine the prevalence of postpartum depression (PPD) and measure the association between specific types of emotional violence and PPD among women attending antenatal care in Tanzania.

Methods: The study was conducted in Kilimanjaro Region, Tanzania. A total of 1,013 pregnant women were followed until 40 days post-delivery. Data were collected through four face-to-face interviews conducted before 24th gestational week, in gestational week 34-36, at delivery, and 40 days postpartum. Emotional violence was assessed through the WHO questionnaire tool for research on intimate partner violence. Signs of PPD were measured using Edinburgh Postpartum Depression Scale. Bivariate and multivariate logistic regression were used to analyze the data.

Results: The prevalence of women's exposure to emotional violence during pregnancy was 21.1%, whereas the prevalence of PPD was 12.0%. Having an intimate partner who threatened to hurt the woman or someone she cared for, was a strong predictor for postpartum depression (AOR= 3.38; CI95%: 1.62-7.06), followed by number of co-wives (AOR=2.54; CI95%: 1.03-6.29) and self-reported lack of practical and emotional support (AOR=2.37; CI95%: 1.28-4.35). The findings suggest that 40.1% of all PPD cases could be prevented if at least one type of IPV was eliminated.

Conclusions: Emotional violence, number of co wives and lack of practical and emotional support were important risk factor for PPD. To address the problem of emotional violence and PPD, community-based services aimed at increasing awareness and early identification of emotional violence and PPD should be instituted. Moreover PPD should be integrated into guidelines for perinatal care.

O12 - Intimate Partner Violence among Pregnant Women and Exclusive Breastfeeding

Global Health

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Introduction/Purpose: The purpose of the study is to measure whether exposure to Intimate Partner Violence (IPV) is associated with premature termination of Exclusive Breastfeeding (EB) among pregnant women with live singleton births, whose children survived infancy in Moshi, Tanzania.

Methods: We used a prospective cohort design.

Participants were interviewed twice during pregnancy and thrice after giving birth. The last interview was conducted 2-3 years postpartum. Emotional, physical and sexual IPV exerted by the current partner was assessed at 34 weeks gestational age. Severe IPV was defined as exposure to a combination of all three types of IPV. Furthermore, IPV was categorized as either having happened at any time point in the relationship or specifically during the index pregnancy.

EB was categorised dichotomously as EB for more or less than 6 months.

Results: After confounding adjustments, women who were exposed to IPV at any point in their relationship had more than 50% higher odds of terminating EB before the child was 6 months old as compared to women who were not exposed to IPV (aOR 1.62 95%CI: 1.27; 2.06). Women exposed to severe IPV had twice the odds of early termination of EB (aOR = 1.95 95%CI: 1.12; 3.37). Furthermore, the odds were tripled if exposure happened specifically during the index pregnancy (aOR = 2.93 95%CI: 1.3; 6.6).

Conclusions: We found a strong association between exposure to IPV and premature termination of EB.

O13 - Sleeping problems in pregnancy

Obstetrics

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Introduction/Purpose: Sleep disturbances are common during pregnancy, yet under-diagnosed and under-investigated. Assessment of sleep quality is clinically relevant in view of the previous findings that sleep disturbances may be associated with an increased risk for adverse pregnancy or delivery outcomes. We investigated sleep quality during pregnancy focusing on insomnia, nocturnal breathing problems and sleepiness.

Methods: A total of 1858 pregnant women from the FinnBrain Birth Cohort Study were studied three times prospectively during pregnancy. Sleep quality was assessed in early, mid-, and late pregnancy by using the Basic Nordic Sleep Questionnaire. Responses were dichotomized to represent clinically significant problems. McNemar's test was used to compare dichotomous variables.

Results: Each insomnia symptom type increased from early to late pregnancy (all p values < 0.001). Snoring increased across pregnancy (p < 0.001). Witnessed apneas remained rare. General sleep quality level remained the same during early and mid-pregnancy, but decreased towards late pregnancy (p < 0.001). Morning and daytime tiredness decreased from early to mid pregnancy (p < 0.05 and p < 0.001, respectively) and also from early to late pregnancy (p < 0.001 and p < 0.05, respectively). Women also took more naps in early and late pregnancy comparing to mid-pregnancy (p < 0.001).

Conclusions: Our study was in keeping with previous findings that general sleep quality declines as pregnancy proceeds. Using a detailed sleep questionnaire, we further showed that sleep onset insomnia, sleep maintenance insomnia, and snoring worsened as pregnancy proceeded. However, no increase in negative daytime consequences was found, presumably indicating a compensatory capacity against pregnancy-related sleep impairment.

O14 - Guidelines' effect on managing hypertensive disorders at Zanzibar's main hospital

Global Health

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Introduction/Purpose: To estimate effect of locally-tailored clinical guidelines (PartoMa) on intrapartum quality of care and perinatal outcome for women with severe hypertensive disorders in pregnancy (sHDP).

Methods: A quasi-experimental pre-post study was conducted at Zanzibar's low-resource referral hospital, Mnazi Mmoja Hospital. All laboring women with sHDP at baseline (October 2014 - January 2015) and during 9th to 12th intervention month (October 2015 - January 2016) were included for assessment of background characteristics, clinical practice and birth outcomes by criterion-based case file reviews. Main outcome was changes in quality of intrapartum care, assessed by indicators related to diagnosis, monitoring and treatment.

Results: At baseline, 188/2761 (7%) laboring women had sHDP, and 196/2398 (8%) during intervention months. Blood pressure was not recorded in an additional 23% and 22%, respectively. Median time from last blood pressure until delivery fell from 162 (IQR 80–328) to 129 minutes (IQR 60–245) (Mann–Whitney test for difference, $P = 0.02$). Antihypertensive treatment increased from 47% to 64% (RR 1.37, 95% CI 1.14–1.66). Stillbirths reduced from 21% to 12% (RR 0.56, 95% CI 0.35–0.90). Apgar score ≥ 7 increased from 65% to 76% (RR 1.17, 95% CI 1.03–1.33).

Conclusions: PartoMa guidelines were associated with improvements in surveillance and treatment, and reduction in stillbirths. Though improved, overall quality of care remained substandard. While health system strengthening is crucial, locally-tailored clinical guidelines appeared effective as a first step in helping work-overloaded health providers at a low-resource hospital to improve safety at birth.

O15 - Maternal deaths from hypertensive disorders: lessons learnt

Obstetrics

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Introduction/Purpose: Hypertensive disorders of pregnancy have been the most frequent cause of maternal death in Norway since 1996 and are strongly associated with substandard care. In the UK, the number of maternal deaths due to hypertensive disorders has decreased drastically due to the implementation of updated guidelines, indicating a potential for reducing the number of deaths in other countries as well. Through audits of maternal deaths, we aimed to prevent future deaths from hypertensive disorders in pregnancy by identifying suboptimal factors in the treatment.

Methods: Maternal deaths in Norway from 1996 to 2014 were identified through register linkages. The Norwegian Maternal Mortality Audit Group performed all case assessments included in this study, classified the cause of death, evaluated the treatment, and identified suboptimal factors to care in each case. Emphasis was placed on antihypertensive treatment, timing of delivery, stabilization before delivery, and quality of care. Learning points were prepared to improve the treatment of hypertensive disorders of pregnancy.

Results: We identified 74 maternal deaths. The maternal mortality rate was 6.5 deaths per 100 000 live births. The most common cause of death was hypertensive disorders (n=16 deaths). In 14 of these deaths (87%), the audit group concluded that improvements to care may have made a difference to the outcome.

Conclusions: In 1996-2014, hypertensive disorders were the most common cause of maternal death in Norway. Our study indicates that such deaths can be prevented by improvements in antihypertensive treatment and timing of delivery.

O16 - Causes of stillbirth by gestational age: added value of postmortem examination

Obstetrics

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Introduction/Purpose: Stillbirth often remains unexplained. Causes may vary by gestational age. Moreover, postmortem examination is frequently incomplete.

Methods: This retrospective cohort study was conducted at the Department of Obstetrics and Gynecology, Helsinki University Hospital, Finland, and comprised all 214 antepartum singleton stillbirths of gestational age $\geq 22 + 0$ or with birth weight of ≥ 500 g that occurred from 2003 to 2015. We compared the causes of death in second- and third-trimester antepartum singleton stillbirths and estimated the value of postmortem examination. Maternal and fetal characteristics and the results of the postmortem examination were collected from medical records. Causes of death constituted ten specific categories.

Results: Stillbirths related to placental insufficiency ($p = 0.001$) and to maternal smoking ($p = 0.02$) occurred more frequently in the second trimester than in the third trimester, whereas stillbirths related to umbilical-cord complications occurred more often in the third trimester ($p = 0.04$). Unexplained stillbirths peaked at full term ($p = 0.02$). Cause of death remained unexplained after a full postmortem examination in only 10.7% of the cases.

Conclusions: The cause of stillbirth varied by gestational age. A standardized postmortem examination clearly reduced the rate of unexplained stillbirths. Knowledge of cause of death may impact both the follow-up and the outcome of any subsequent pregnancy.

O17 - Influence of postpartum depression on child growth: A cohort study.

Global Health

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Introduction/Purpose: To assess the impact of postpartum depression on child growth in a Tanzanian birth cohort.

Methods: This prospective cohort study took place in Moshi, Tanzania, from March 2014 to June 2017. Pregnant women over the age of 18 who sought antenatal care at two health clinics in Moshi, and the children they were pregnant with, were eligible for this study. The women were interviewed twice during pregnancy and three times after birth, the final follow-up taking place 2-3 years postpartum. Signs of postpartum depression were assessed at approximately 40 days postpartum with the Edinburgh Postnatal Depression Scale (EPDS). Child growth was assessed with anthropometric measurements at 2-3 years of age, and expressed as mean z-scores.

Results: 1128 mother-child pairs were followed throughout the duration of the study. 12.2% showed signs of postpartum depression. Adjusted mean height-for-age z-score (HAZ) was significantly lower at 2-3 years follow-up for children of mothers with postpartum depression, compared to children of mothers without (difference in HAZ: -0.32, 95%CI:-0.49;-0.15). Adjusted mean weight-for-height z-score (WHZ) was significantly increased for the children exposed to postpartum depression (difference in WHZ: 0.21, 95%CI:0.02;0.40), while there was no significant difference in adjusted weight-for-age z-score (WAZ) (difference in WAZ: -0.04, 95%CI:-0.20;0.12).

Conclusions: We found that postpartum depressive symptoms caused decreased linear height in children at 2-3 years of age, and slightly increased weight-for-height. We suggest that postpartum depression is integrated into perinatal health assessments, and that perinatal care providers are trained so they can identify and manage cases of postpartum depression correctly.

O18 - Childbirth in Swedish women with vaginismus or localised provoked vulvodynia

Obstetrics

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Introduction/Purpose: The objective of this study was to compare parity, mode of delivery and sociodemographics in women diagnosed with vaginismus or localised provoked vulvodynia (LPV) before first childbirth to women without diagnosis

Methods: All women born in Sweden 1973-83 who remained nulliparous or gave birth for the first time during the years 2001-09 comprised the study population. Data from several National Swedish registers were linked. Cases were identified by ICD-10 codes for LPV/vaginismus. Women diagnosed for the first time after childbirth or diagnosed with endometriosis, lichen sclerosus, lichen planus or lichen simplex chronicus were excluded. Cases were compared to all other women. Multinomial and logistic regression were used to calculate odds ratios for mode of delivery and parity.

Results: Women with LPV/vaginismus differed in sociodemographic variables by more often being unmarried ($p=0.001$), unemployed ($p=0.012$), nicotine users during pregnancy ($p=0.008$), have a higher level of education ($P<0.001$) and a lower body mass index ($p<0.001$). They were less likely to give birth (adj. OR 0.61, 95% CI 0.56-0.67). Women with LPV/vaginismus had an increased risk of giving birth by caesarean section (CS), especially for maternal request (adj. OR 3.48, 95% CI 2.45-4.39). In vaginal delivery, LPV/vaginismus increased the risk of perineal lacerations (adj. OR 1.87, 95% CI 1.56-2.25).

Conclusions: LPV/vaginismus affects reproduction and increases the risk of giving birth by CS, especially for maternal request. Further these women had an increased risk of perineal lacerations during vaginal delivery. This shows the importance of not only addressing sexual function in these women but reproductive function as well.

Urogynaecology, Global Health & Gynaecological Oncology

O19 - Mapping the lack of public initiative against female genital mutilation in Denmark

Global Health

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Introduction/Purpose: Female genital mutilation (FGM) is a harmful practice prevalent in primarily 30 African countries. The practice of FGM has spread to Western countries due to migration. The European Institute for Gender Equality recommend that FGM be combatted by nationally coordinated efforts. FGM was outlawed in Denmark 2003, but no national efforts have been implemented. Instead, the task of combatting FGM is currently under the responsibility of local governments in the form of the 98 municipalities. Aim: to investigate whether FGM is combatted in accordance with international recommendations and standards in Denmark.

Methods: All 98 Danish municipalities were invited to respond to a questionnaire regarding FGM in their respective municipalities. The questionnaire consisted of four overall areas of focus: “action plan”, “registration”, “information material” and “preventive initiatives”.

Results: A total of 67 municipalities participated in the study. At the time of census, 1.8% of the Danish population were immigrants with origins in risk countries. A total of 10,4% of the responding municipalities indicated to have implemented a specific action plan against FGM. A total of 7,5% had implemented specific preventive initiatives against FGM. Registration of reported FGM cases were indicated to be performed in 73.1% of the responding municipalities; however, only 17.9% stated to perform registration of FGM specifically as such, and not as general child abuse.

Conclusions: Our study shows that the current situation of FGM registration and prevention being under local administrative responsibility in the 98 Danish municipalities has led to a severe lack of coordinated public initiative against FGM.

O20 - Pelvic organ prolapse in Tanzania – prevalence and risk factors

Global Health

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Introduction/Purpose: The prevalence and risk-factors of pelvic organ prolapse (POP) in Tanzania are unknown. To help elucidate the problem, we assessed POP and associated risk-factors among Tanzanian women by deploying the POP-Q classification system.

Methods: A population-based study conducted in Kilimanjaro Region, Tanzania among 1195 women aged 18–90. Home-based questionnaire interviews were performed and the women were subsequently invited to the nearest health clinic for pelvic examination. Trained physicians used the POP-Q classification system to assess the POP stage. Data were analysed using descriptive statistics and bivariable and multivariable logistic regression modelling.

Results: Of 1063 women presented at the clinic, 1047(88%) accepted a clinical examination. Anatomical POP stage II–IV was found in 64.6% of the women and 6.7% had a severe POP descending 1 cm+ below the hymen. POP stage II–IV was associated with being aged 35+ years, being a farmer, doing petty trading and having delivered 3 times or more. Severe POP was associated with carrying heavy objects for ≥ 5 hours (OR 4.70;1.67–13.2), having delivered 5 times or more (OR 10.2;2.22–48.6) and having delivered at home (OR 2.40;1.36–4.22).

Conclusions: POP is common in Tanzanian where 64.6% of women are having POP grade II-IV and 6.7% are having severe POP descending 1 cm+ below the hymen. Risk-factors are increasing age, heavy lifting, high parity and home-delivery. Access to surgical repair services is unattainable for the majority of Tanzanian women. It is therefore important that health workers are educated and trained in fitting pessaries which can effectively reduce POP symptom bother.

O21 - Mobile intervention to increase cervical screening attendance among Tanzanian women

Global Health

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Introduction/Purpose: Cervical cancer is a major health concern in Tanzania, caused by poor attendance for cervical cancer screening and follow-up of women at risk. Mobile telephone health interventions are proven effective tools to improve health behaviour in African countries. So far, no knowledge exists on how such interventions may perform in relation to cervical cancer screening in low-income settings. This study aims to assess the degree to which a Short Message Service (SMS) intervention can increase attendance at appointments among women who have tested positive for high-risk (HR) Human Papillomavirus (HPV) during cervical cancer screening.

Methods: The study, *Connected2Care*, is a non-blinded, multicentre, parallel-group, randomised controlled trial. Tanzanian women testing positive to HR HPV at inclusion are randomly assigned in an allocation ratio of 1:1 to the SMS intervention or the control group (standard care). In a period of 10 months, the intervention group will receive 15 one-directional health educative text messages and SMS reminders for their appointment. The total sample size is 700 with 350 women in each study arm. Primary outcome is attendance rate for follow-up. Barriers against implementing the intervention will be assessed in a mixed-methods sub-population study.

Results: Trial status: Ongoing

Conclusions: This study may provide information on the potential effects and barriers in implementing an SMS intervention targeting a group of women who are followed up after testing positive for HR HPV and are, therefore, at increased risk of developing cervical cancer. This can guide decision-makers on the effective use of mobile technology in a low-income setting.

O22 - High-grade lesions in relation to reproductive characteristics and HIV status

Gynaecological Oncology

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Introduction/Purpose: To assess high-grade cervical lesions in relation to reproductive characteristics, HIV status and CD4 count among women in Tanzania.

Methods: A cross-sectional study involving women attending cervical cancer screening at Kilimanjaro Christian Medical Center and Ocean Road Cancer Institute in Tanzania. A total of 4038 women were enrolled. Information about sexual and reproductive characteristics was obtained. The women were tested for HIV and underwent gynecological examination with collection of cervical cells for conventional cytological examination. The establishment of a cytological diagnosis was performed at Vejle Hospital, Denmark. The CD4 count among the HIV positive women was obtained at the HIV care and treatment clinics, which the women were affiliated. Data were analyzed by descriptive statistics and bivariate logistic regression analyses.

Results: Eighty-eight pct. had normal cytology, 8.3 % had low-grade lesions and 3.5% had high-grade lesions or above. Women with high grade lesions were more likely to having had sexual intercourse before age 21 (OR=2.68;95%CI:1.85-3.89), having delivered first child before age 21 (OR=2.78;95%CI:1.85-3.84), and having delivered 3 children or more (OR= 1.46;95%CI:1.01-2.11). Women who were HIV positive had a 6 times increased odds (OR=5.84;95%CI:4.12-8.27) for having high-grade lesions. In this group of women, an association between CD4 count <500 and high-grade lesion was found (OR=9.38 95%CI;5.07-17.3).

Conclusions: High-grade cervical lesion is associated with early sexual debut, low age at first delivery and high parity. In addition HIV-positive women have increased risk of developing cervical high-grade lesions, with risk inversely associated with CD4 count.

O23 - Performance of VIA, HC2 and CareHPV in detection of cervical pre cancerous lesions

Gynaecological Oncology

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Introduction/Purpose: The aim of this study was to examine the test performance of CareHPV, a HPV-DNA test for low-resource settings, Hybrid-Capture2 (HC2) and visual inspection with acetic acid (VIA) for detection of cytologically diagnosed high grade lesions or cancer (HSIL+).

Methods: Women attending cervical cancer screening at Ocean Road Cancer Institute (ORCI) and Kilimanjaro Christian Medical Center (KCMC) in Tanzania were invited to participate in the study. A total of 3990 women were enrolled. The women underwent gynecological examination with collection of cervical cells for CareHPV-DNA detection, HC2 HPV-DNA detection and conventional cytological examination. Subsequently VIA was performed. CareHPV analyses were performed at ORCI and KCMC, HC2 analyses at Tuebingen University Hospital, Germany and the establishment of a cytological diagnosis at Vejle Hospital, Denmark. The sensitivities and specificities of careHPV, HC2 and VIA in comparison with cytology were calculated.

Results: A total of 22.5 % of the women had a positive CareHPV test, 17.2 had positive HC2 test and 5.5% had a positive VIA test. The sensitivities and specificities for CareHPV testing for detection of HSIL+ were: 77.8%, 79.7% and for HC2; 78.1%, 85.3%. VIA showed a low sensitivity of 28.5 but a high specificity of 95.4 for detection of HSIL+.

Conclusions: Our results confirm the low sensitivity of VIA for detection of HSIL+ and further document that careHPV test is promising as a primary screening method for cervical-cancer prevention in low-resource regions.

O24 - Risk for CIN3+ in women with a negative cervical biopsy

Gynaecological Oncology

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Introduction/Purpose: The Norwegian Cervical Cancer Screening Programme (NCCSP) recommends follow-up of histologically confirmed normal/CIN1 with combined cytology and HPV testing within 6-12 months. This study examines adherence to guidelines and subsequent risk for CIN3+ within this subset of women.

Methods: Women aged 25-69 years attending the NCCSP in Norway's two northernmost counties were included. An exposed cohort with histologically confirmed normal/CIN1 after an ASC-US/LSIL or ASC-H/HSIL enrolment cytology (N = 374) was compared to a non-exposed cohort with a normal enrolment cytology attending primary screening (N = 25,948). Risk calculations were stratified by outcomes of the first followup cytology. The study endpoint was CIN3+ or censored at 78 months of follow-up.

Results: In the exposed cohort, the 42-month cumulative incidence of CIN3+ was 9.4% (95% CI: 4.1-14.7) for women with an abnormal first follow-up cytology and 1.6% (95% CI: 0.0-3.4) for women with a normal first follow-up cytology, versus 0.21% (95% CI: 0.15-0.27) in the non-exposed cohort ($p < 0.01$). The CIN3+ risk was higher in the exposed cohort when the first follow-up cytology was abnormal (HR 20.4, 95% CI: 11.2-37.1) compared to normal (HR 4.7, 95% CI: 1.9-11.6) with the non-exposed cohort as reference.

Conclusions: After a negative cervical biopsy, a normal first follow-up cytology provided a CIN3+ risk considered acceptable to recommend return to routine screening in three years. Cytology and HPV co-testing in post-colposcopy follow-up of negative biopsies may improve risk stratification.

O25 - Iatrogenic gynecologic fistula; results from a Norwegian national competence center

General Gynaecology

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Introduction/Purpose: Genital fistula leads to urinary or faecal incontinence. Surgery or radiation are dominant cause in industrialized countries. Gynaecological department Haukeland University Hospital has since 1995 prospectively registered characteristics and treatment-outcomes of genital fistulas, from 2012 as the national referral centre. This study explores clinical details and outcomes of fistula caused by surgery or radiation.

Methods: Prospective hospital-registry-based cohort study.

Results: During 1995-2015, of 287 women with genital fistula, 125 were surgery/radiation related and 111 women with 116 fistulas participated; 48 enterovaginal/rectoperineal and 68 urologic fistulas. Surgery (without radiation) was the cause for 84 women (76%), radiation for 27.

Urogenital fistulas (68/116) were dominantly caused by hysterectomy (42/68, 62%), 8 (12%) from TVT/Mesh-procedures and 8 by radiation. Enterogenital fistulas (48/116) were caused by radiation in 25/48 (52%), 15 (31%) by gut-surgery and 7 (15%) by vulvo/vaginal-procedures.

The radiation fistulas were significantly wider than surgical; median 15 mm (95% Confidence Interval (CI) 5-20) versus 3 mm (95%CI 2-4, $p<0.001$).

Surgical fistulas were operated by a vaginal procedure in 67/85, 7 abdominally, and 73/74 (98%) healed. Catheter drainage cured 6/68 urinary fistulas and enterostomy 3/48 enteral fistulas. Of radiation fistulas 8/31 (26%) received vaginal fistula surgery and only 6/31 (19%) healed. Permanent deviation (enterostomy/pyelostomy) was needed for 20 (65%). Adjusted for organ affection (enteral versus urologic) and fistula size, radiation therapy had independent odds ratio of 65 for not healing, 95%CI 13-314.

Conclusions: Surgically caused fistula has an excellent prognosis treated at our competence centre. For most radiation fistulas, permanent deviation will be the solution.

O26 - Pelvic floor muscle training and intravaginal electrical stimulation in women with spinal cord injury: A randomized clinical trial study

Urogynaecology

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Introduction/Purpose: Urinary incontinence is a prevalent problem in women with spinal cord injury. The aim of this study was to examine the effect of pelvic floor muscle training (PFMT) alone and combined with intravaginal electrical stimulation (IVES) on urinary incontinence in women with incomplete spinal cord injury.

Methods: In this investigator-blinded randomized clinical trial we recruited women aged 18–75 with incomplete spinal cord injury and urinary incontinence from a single spinal cord injury clinic in Denmark. Women were randomly assigned to either PFMT or PFMT combined with IVES daily at home for 12 weeks. All women were trained by a physiotherapist using vaginal palpation and electromyography biofeedback. Outcome measures were recorded at baseline (Week 0), post-intervention (Week 12) and follow-up (Week 24) and included change in total score on International Consultation on Incontinence Questionnaire urinary incontinence short form (ICIQ-UI-SF) and daily episodes of urinary incontinence.

Results: During April 27, 2015–September 9, 2016 we randomly assigned 36 women (17 in the PFMT-group and 19 in the PFMT+IVES-group); 27 completed the interventions (13 in the PFMT-group and 14 in the PFMT+IVES-group). The results showed no difference between the groups on ICIQ-UI-SF or episodes of urinary incontinence at 12 and 24 weeks. Only the PFMT-group had a significant change from baseline on ICIQ-UI-SF (-2.4 [95% CI -4.3–-0.5], p=0.018) and daily episodes of urinary incontinence (-0.4 [95% CI -0.8–-0.1], p=0.026) at 12 weeks.

Conclusions: PFMT+IVES is not superior to PFMT alone in reducing urinary incontinence in women with incomplete spinal cord injury.

O27 - No association between native tissue vaginal vault suspension and risk of pelvic pain or sexual dysfunction.

General Gynaecology

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Introduction/Purpose: Vault suspension is used during hysterectomy on benign indication in attempt to decrease risk of subsequent pelvic organ prolapse. We aimed to elucidate pelvic pain and sexual dysfunction as possible complications to prophylactic suspension.

Methods: We included all women with a total hysterectomy on benign indication (10 May 2012 and 4 September 2013) and registered with a suspension method or specifically *no suspension* in the nationwide Danish Hysterectomy and Hysteroscopy Database (N=3999). A postal questionnaire on pelvic pain and sexual dysfunction was sent to women 25.8 (range 23.8 – 28.4) months after hysterectomy. Questions were selected from a previous study as well as from the Pelvic Organ Prolapse/Urinary Incontinence Sexual Questionnaire (PISQ-12). Descriptive statistics together with multivariable log-binomial - and linear regression models were fitted to assess risk of pelvic pain and degree of sexual dysfunction, respectively.

Results: The response rate was 60.3% (N=2412). Of the respondents, 88.8% (N=2143) were registered with a suspension method and 11.2% (N=269) were registered with specifically *no suspension*. Overall, pelvic pain was reported in 24.3 % (N=576). The two adjusted analyses showed that suspension was significantly associated with less degree of sexual dysfunction (regression coefficient -0.92; 95% CI -1.70 to -0.14; p-value 0.02) and did not increase risk of pelvic pain (relative risk 0.92; 95% CI 0.75 to 1.14; p-value 0.45) compared to *no suspension*.

Conclusions: Prophylactic vault suspension was associated with less degree of sexual dysfunction. Moreover, we found no evidence of associated risk of pelvic pain and prophylactic vaginal vault suspension.

Obstetrics & Fetal Medicine

O28 - Pregnancy and early childhood outcomes of euploid pregnancies with a high risk in the first-trimester combined screening

Fetal Medicine

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Introduction/Purpose: The aim of first-trimester combined screening (FTS) is to identify the fetuses with chromosomal abnormalities. High risk in the screening is likely to cause anxiety on the parents even if the chromosomes of the fetus are normal. Little is known about the outcomes of euploid children born from these pregnancies.

Methods: During 2009 – 2012 all pregnancies with a trisomy 21 risk $\geq 1:50$ in the FTS but normal fetal chromosomes at the Department of Fetal Medicine at Helsinki University Hospital were included. Two controls with a risk $\leq 1:300$ were searched for each case from the same date of nuchal translucency measurement. Miscarriage, termination of pregnancy, stillbirth, premature delivery, and delivery of an unhealthy child were considered adverse outcome. The child was considered unhealthy, if there were major structural defects, neurodevelopmental impairment, or genetic syndromes.

Results: The study comprised 483 women, of which 161 were cases and 322 controls. The follow-up time of children born alive ($n = 475$) was in mean 61.4 ± 11.2 months (range: 25 days – 85 months). Any adverse outcome was recorded in 31 / 154 (19.3%) of the cases and in 34 / 322 (10.6%) in controls. After adjusting for age, parity, and smoking odd ratio (OR) for any adverse outcome was 1.9 (95% CI: 1.1 - 3.4, $p = 0.03$) for cases.

Conclusions: High risk in the FTS does not only refer to a risk of chromosomal abnormalities but also for a higher risk for other adverse outcomes.

O29 - Validation of the SNP-Based NIPT in Twin Gestations for Zygosity-, Individual-Fetal-Gender-, and Aneuploidy-Determination

Fetal Medicine

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Introduction/Purpose: Non-invasive prenatal testing (NIPT) using cell-free DNA in maternal plasma can be used for aneuploidy screening in both singleton and twin pregnancies. Monozygotic (MZ) twin gestations that are monochorionic are at an increased risk of fetal loss associated with twin-to-twin transfusion syndrome, however, NIPT has previously been unable to accurately report zygosity in twin gestations. Here, we report the performance of a single-nucleotide polymorphism (SNP)-based NIPT to determine zygosity, presence of aneuploidy, and individual fetal gender in twin gestations.

Methods: Blood was collected from women at ≥ 9 weeks gestational age with twin pregnancies; clinical truth on zygosity, chromosome copy number, and gender count were collected. Plasma was isolated and analyzed for zygosity, chromosome copy number at chromosomes 21, 18, and 13, and gender count (two males [MM], one male and one female [MF], or two females [FF]); test performances were reported.

Results: A total of 126 patient samples from twin pregnancies were included in the study; not every case had truth for each indication. Zygosity accuracy was 100% (MZ 29/29, DZ 64/64; CI: 96.1-100%). Aneuploidy sensitivity was 100% (11/11 [MZ: one trisomy (T21); DZ: four T21, five T18, one T13]; CI: 69.2-100%) as was specificity (96/96; CI: 94.8-100%). Gender for each fetus was called with 100% accuracy (102/102; CI: 95.2-100% [MM 40, MF 34, FF 28]).

Conclusions: This study validates the ability of this SNP-based NIPT to detect aneuploidy, and is the first to accurately call zygosity and gender of each fetus in twin gestations.

O30 - Management of suspected primary toxoplasma infection in pregnant women: twenty years of experience of amniocentesis in a low-prevalence population

Fetal Medicine

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Introduction/Purpose: Toxoplasma infection during pregnancy poses a threat to the fetus. If maternal serology indicates possible primary infection, amniocentesis for toxoplasma PCR is performed and antiparasitic treatment given. Discriminating between primary and latent infection is challenging and unnecessary amniocenteses may occur. Procedure-related fetal loss after amniocentesis is of concern. The aim of this retrospective study was to determine whether amniocentesis is performed on the correct patients and whether the procedure is safe on this indication.

Methods: We included all singleton pregnancies (n=346) at Oslo University Hospital undergoing amniocentesis due to suspected toxoplasma infection (1993-2013). Data were obtained from hospital records. Serum samples were analysed at the Toxoplasma Reference Laboratory at Oslo University Hospital. Time of maternal infection was evaluated retrospectively based on antibody results.

Results: Of the women, 50% (173) were judged infected before pregnancy, 23% (80) possibly in and 27% (93) infected during pregnancy. 49 (14%) women seroconverted, 42 (12%) had IgG antibody increase and 255 (74%) had IgM positivity and low IgG avidity. Fifteen offspring were infected judged by amniotic fluid PCR and/or serology performed postnatally. Median gestational week (GW) at amniocentesis was 16.7 (Q₁=15, Q₃=22), with sample volume 4 ml (Q₁=3, Q₃=7). Two miscarriages occurred four weeks after the procedure, both performed in GW 13.

Conclusions: Half of our study population was infected before pregnancy. In order to reduce the unnecessary amniocenteses we advise serology three weeks after a suspect result and interpretation by multidisciplinary staff. Amniocentesis is safe and useful in diagnosing congenital toxoplasma infection after GW 15.

O31 - Effect of maternal hypothyroidism and levothyroxine use during pregnancy on pregnancy and perinatal outcome

Obstetrics

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Introduction/Purpose: To study the effects of maternal hypothyroidism and levothyroxine treatment on pregnancy and perinatal complications.

Methods: This nation-wide register-based study included all singleton births in Finland in 2004–2013 (N=571 785). Women with hypothyroidism were identified in the Finnish Medical Birth Register and compared with women without thyroid disease using logistic regression. The main outcome measures were pregnancy and perinatal complications.

Results: Maternal hypothyroidism increased the odds of gestational diabetes mellitus (GDM) (OR 1.19, 95% CI 1.13–1.25), gestational hypertension (OR 1.20, 95% CI 1.10–1.30), severe preeclampsia (OR 1.38, 95% CI 1.15–1.65), caesarean sections (OR 1.22, 95% CI 1.17–1.27), preterm births (OR 1.25, 95% CI 1.16–1.34), large-for-gestational age newborns (LGA₊₂ standard deviation between 24 and 43 gestational weeks) (OR 1.30, 95% CI 1.19–1.42) and neonatal intensive care unit (NICU) admission (OR 1.23, 95% CI 1.17–1.29). Moreover, we observed a small but significant risk for major congenital anomalies (OR 1.14, 95% CI 1.06–1.22). In the sensitivity analysis with mothers with consistent levothyroxine purchases, only the associations between GDM (OR 1.12, 95% CI 1.03–1.22), caesarean sections (OR 1.13, 95% CI 1.06–1.21), NICU admission (OR 1.09, 95% CI 1.01–1.18) and LGA (OR 1.26, 95% CI 1.10–1.45) and maternal hypothyroidism remained statistically significant.

Conclusions: Maternal hypothyroidism is associated with several pregnancy and perinatal complications. Sensitivity analysis among mothers with hypothyroidism and consistent levothyroxine use suggest that treatment throughout pregnancy may attenuate some of the risks.

O32 - Fetal cardiac dysfunction at term gestation in type 1 diabetic pregnancies.

Obstetrics

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Introduction/Purpose: Maternal type 1 diabetes (T1DM) affects fetal and offspring wellbeing. The aim was to investigate cardiac function and strain, placental function in T1DM pregnancies, and whether fetal hypoxia and placental inflammation affect fetal well-being.

Methods: Central and peripheral fetal hemodynamics were assessed in 33 women with type 1 diabetes (gHbA1c% $7.9\% \pm 1.6\%$ before gestation) and 67 controls with singleton pregnancies with transabdominal ultrasound at near term gestation. Newborn umbilical cord serum was collected to analyze cardiac natriuretic peptides (atrial and B-type natriuretic peptides) and troponin T concentrations. Placental samples were obtained for quantitative real-time polymerase chain reaction and cytokine analysis.

Results: Weight-adjusted cardiac output was decreased, whereas pulsatility in the aortic isthmus and inferior vena cava, umbilical serum natriuretic peptides, ventricular wall thicknesses and troponin T concentrations were elevated in type 1 diabetic pregnancies. Left ventricular cardiac output correlated inversely with troponin T. None of the newborns were acidemic.

Conclusions: In fetuses of diabetic mothers, fetal cardiac function was decreased affecting the pulmonary circulation when compared to control fetuses at near term gestation. Pulsatilities in the aortic isthmus and inferior vena cava were increased demonstrating impaired cardiac function and strain. Furthermore, cardiac adaptation results in increased cardiac wall thickness and cord blood natriuretic peptides and troponin T levels, where natriuretic peptides have cardioprotective effects. However, no signs of inflammation nor placental dysfunction were seen. Our results suggest that central hemodynamics should be included in monitoring fetal well-being in T1DM pregnancies.

O33 - Metformin treatment of pregnant women with polycystic ovary syndrome - a Nordic RCT

Obstetrics

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Introduction/Purpose: Women with PCOS have increased risk of pregnancy complications. Pooled analysis from two smaller RCTs showed lower incidence of late miscarriages and preterm births among women who received metformin from 1st trimester to delivery, compared to placebo. We aimed to explore whether metformin could prevent late miscarriage and preterm delivery in these women.

Methods: Randomized, double-blinded, multicenter study (14 centers in Norway, Sweden and Iceland). Women with PCOS were randomized from 2012 to 2016, to either metformin (2000mg/day) or placebo from 1st trimester to delivery. Primary endpoint was the composite prevalence of late miscarriage and preterm birth.

Secondary and tertiary endpoints were; prevalence of gestational diabetes, preeclampsia and pregnancy induced hypertension, NICU admission, maternal hospitalization, maternal weight-gain, newborn weight, length and head circumference.

Results: 478 women randomized to metformin (N=238) or placebo (N=240). "Intention-to-treat" analysis showed a prevalence of late miscarriage and preterm birth of 12 and 23 in the metformin and placebo group respectively (p=0.08 CI: 0.03- 4.51). In "per-protocol" analysis 9/211 on metformin, and 23/223 on placebo had late miscarriage or preterm birth (p=0.02, CI: 1.11-6.49).

No difference in prevalence of gestational diabetes, but trend towards fewer preeclampsia in the metformin-group (p=0.10). Women randomized to metformin gained less weight (8.7 vs. 11.5 kg, p<0.001, CI: -4.08- -

1·48). Metformin exposed offspring had larger head circumference (35·4 vs. 35·0 cm, $p < 0·006$, CI: -0·62- -0·11)

Conclusions: Metformin from 1st trimester to delivery, prevented late miscarriage and preterm delivery if participants adhered to treatment. Metformin did not prevent gestational diabetes in women with PCOS.

O34 - Maternal allergy as an isolated risk factor for early-onset preeclampsia

Obstetrics

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Introduction/Purpose: Immunological mechanisms underlying the development of preeclampsia are well known, but an association to allergy has not yet been demonstrated. The aim of our study was to assess the effect of maternal pre-gestational allergy on the risk of early-onset and late-onset preeclampsia.

Methods: We designed a retrospective cohort study set in the Norwegian cities of Stavanger (1996-2014) and Bergen (2009-2014), including all women giving birth. Pre-gestational asthma, allergy, other well-known risk factors for preeclampsia, maternal age and parity were obtained from the electronic medical record system. The main outcome variables were early-onset and late-onset preeclampsia (before and after 34 completed weeks of gestation, respectively). We used multinomial logistic regression to estimate odds ratios (OR) with 95% confidence intervals (95% CI) for early and late-onset preeclampsia in women with pre-gestational allergy when compared to women without allergy, adjusting for covariates. Predicted probabilities for the outcomes were also calculated.

Results: Of the 110 064 included pregnancies, 2 799 had late-onset preeclampsia (2.5%) and 348 had early-onset preeclampsia (0.3%). Pre-gestational allergy increased the risk of early-onset preeclampsia (OR 1.7, 95% CI 1.3- 2.4), and reduced the risk of late-onset preeclampsia (OR 0.8, 95% CI 0.7-0.9), with a significant difference on how allergy affected the risk of early and late-onset preeclampsia.

Conclusions: Pregestational maternal allergy is a novel risk factor for the development of early-onset preeclampsia, with odds ratio 1.7 compared to women not suffering from allergy.

O35 - Outcome in monoamniotic twin pregnancies managed primarily by outpatient care

Fetal Medicine

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Introduction/Purpose: Monoamniotic twin pregnancies are high risk pregnancies and management by inpatient or frequent outpatient care has been recommended. This study aimed to determine outcomes in a national cohort of monoamniotic twin pregnancies, managed primarily as outpatients.

Methods: We analysed prospectively recorded data from local Astraia databases, from the Danish Fetal Medicine Database and from medical records of all monoamniotic twin pregnancies, diagnosed at the 1st trimester scan or later, and managed at the six tertiary fetal medicine centers in Denmark from January 2004 to December 2013.

Results: Sixty-three monoamniotic twin pregnancies were included. Thirteen pregnancies (20.6%) were terminated in relation to diagnosis. Of the remaining 100 fetuses with a normal 1st trimester scan, there were 25 miscarriages before 22 weeks (25.0%), three fetal terminations (4.0%) and eight intrauterine deaths after 22 weeks (11.1%). After 26+0 weeks, 80% of cases were managed as outpatients and intrauterine fetal death occurred in 3.6% of outpatients and 28.7% of acute inpatients. There were 64 live-born children (64.0%) delivered by cesarean at a median gestational age of 33+0 weeks. At week 32, 33 and 34 prospective risk of intrauterine fetal death was 6.5%, 3.8% and 5.6%, respectively.

Conclusions: In women with monoamniotic twin pregnancies managed primarily as outpatients, the chance of live-born children was 64.0% after a normal 1st trimester scan and 88.9% after the 2nd trimester scan. In pregnancies reaching week 26, 80% were managed as outpatients and had a high survival rate, indicating that despite being a high risk pregnancy, outpatient care seem possible.

O36 - Umbilical vein volume blood flow and uterine artery Doppler indices.

Fetal Medicine

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Introduction/Purpose: To estimate volume blood flow through the umbilical vein in fetuses with abnormal uterine artery Doppler and compare this to pregnancies with normal uterine artery Doppler indices.

Methods: In this prospective study, 55 women were recruited at 20-24 weeks for ultrasound assessment of the uterine artery pulsatility indices. Volume flow through the umbilical vein was calculated by the measurement of the diameter of the intra-umbilical portion of the umbilical vein and time-averaged mean velocity of the venous blood flow. Fetal weight was estimated on ultrasound scan.

Results: Women were grouped into those with abnormal (mean PI > 90th centile, n = 22) and normal (mean PI < 50th centile, n = 28) uterine artery PI. Mean decimal gestational age at ultrasound scan was 22.6 (SD: 0.84) weeks. Estimated fetal weight was 517 (SD: 89) grams. There were no significant differences between the two groups for either gestational age at scan (p = 0.88) or estimated fetal weight (p = 0.885). Because of the study design, uterine artery mean PI was significantly different (p < 0.0001) between the two groups. Umbilical artery volume blood flow was significantly lower (Mean difference 87 ml/min/kg, 95% CI: 5 to 169 ml/min/kg) in pregnancies with abnormal uterine artery PI as compared to those with normal (p = 0.036).

Conclusions: Abnormal uterine artery PI is associated with a reduction in the umbilical volume blood flow at mid-gestation. The estimated fetal weight is unaffected at this stage of pregnancy.

General Gynaecology

O37 - Fertility outcome after cornual resection for interstitial pregnancies

General Gynaecology

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Introduction/Purpose: Cornual resection is a commonly used surgical procedure for interstitial pregnancies. Little is known about the impact of the procedure on subsequent pregnancies. This study evaluates future pregnancy rates beyond gestational week 24 following cornual resections, subsequent modes of delivery and the rate of uterine ruptures.

Methods: Single-center retrospective follow-up study of women diagnosed with interstitial pregnancies at Oslo University Hospital, Ullevål, from August 16th 2005 to May 1st 2016. Women treated with cornual resections (cases) were age- and parity-matched with a control group of women with tubal (non-interstitial) ectopic pregnancies treated with salpingectomy (controls). Subsequent fertility data for cases and controls were collected from Medical Records and the national Medical Birth Registry of Norway.

Results: Forty women with interstitial pregnancies were treated in the study period, of which 33 underwent cornual resections. After excluding women with known infertility, 26 cases were matched with 52 controls (ratio 1:2). Median time of follow-up for cases and controls were 76 months and 71 months, respectively. Subsequent pregnancy rates beyond gestational week 24 were 46 % (cases) and 54 % (controls), $p = 0.632$. Caesarean delivery in subsequent pregnancies was significantly more common among women having had a cornual resection, 60 % vs 18 % ($p = 0.006$). Only two subsequent uterine ruptures were encountered.

Conclusions: Cornual resections as treatment for interstitial pregnancies seem to have no added detrimental effect on subsequent pregnancy rates compared to salpingectomy for non-interstitial tubal ectopics. However, they more often lead to elective caesareans.

O38 - Physical Activity after Outpatient Total Laparoscopic Hysterectomy: Results from a RCT.

General Gynaecology

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Introduction/Purpose: Total laparoscopic hysterectomy (TLH) is increasingly performed as an outpatient procedure. This might compromise patient's quality of life postoperatively, with consequences for physical activity and sick leave. We evaluated physical activity and time to return to work after outpatient and inpatient TLH, results from a randomized trial.

Methods: 204 women were randomized to same-day discharge or overnight stay after TLH on benign indication. We assessed any differences between inpatient and outpatient TLH regarding physical activity and time to return to work. Participants were wearing a pedometer two times preoperatively and again on day 1, 7, 14, 21, and 28 after surgery as an objective measurement of physical activity. Information concerning their readiness and the actual time for return to work together with the EQ-5D were obtained in a diary. We recommended 14 days sick leave.

Results: The analysis included 74 outpatients and 83 inpatients with complete answers from the pedometer and questionnaires. No difference was found in activity levels between groups at any time point, but a difference was seen in the progress of physical activity over time with inpatients being the most active ($p=0.046$). Adjustments for age, BMI, and hospital stay even magnified the difference ($p=0.011$). Employed inpatients returned to work earlier than employed outpatients (18.2 vs. 21.8 days, $p=0.017$).

Conclusions: Inpatients exhibited higher levels of physical activity in the early postoperative period but the most women extended their sick leave. This study adds knowledge to the actual time needed to regain preoperative physical activity levels after TLH.

O39 - Investigating the loss of work productivity due to symptomatic leiomyoma

General Gynaecology

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Introduction/Purpose: Leiomyoma affects up to 50% of fertile women, leading to morbidity such as bleeding or pain. The effect of symptomatic leiomyoma on the productivity of employed women is understudied. The present study investigates productivity loss in a Swedish setting in women with symptomatic leiomyoma compared to healthy women.

Methods: Women seeking care for leiomyoma and heavy menstrual bleeding (HMB) were recruited at nine Swedish sites. Healthy controls with self-perceived mild to normal menstruation were recruited at routine visits. Cases and controls were employed without option to work from home. After recruitment, all women reported the work productivity and activity impairment (WPAI) questionnaire, the pictorial blood assessment chart (PBAC) and pain on the visual analog scale (VAS). The protocol defined mild to normal menstruation as PBAC $\leq$ 100 and VAS $\leq$ 30).

Results: Women with symptomatic leiomyoma (n=88) missed more working time during menses compared to asymptomatic controls (n=34): 7,6 vs 0,2% p=0,003. The proportion of impairment while working was also significantly higher in women with symptomatic leiomyoma (43,8 vs 12,1% p<0,001). Moreover, cases reported greater activity impairment outside office hours (43,9 vs 12,1%, p<0,001). A PBAC<100 was reported by 30,5% of women with self-perceived “mild to normal menstruation”.

Conclusions: Symptomatic leiomyoma leads to loss of working hours as well as loss of productivity during working hours, and affects women in other daily activities. Increased awareness of the impact of leiomyomas on women's lives is needed, and treatment plans should improve for these women to reach their full potential.

O40 - Treatment of abnormal uterine bleeding by endometrial ablation: comparison of treatment in two periods

General Gynaecology

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Introduction/Purpose: Abnormal uterine bleeding can be treated with hysteroscopic resection of the endometrium (TCER) and/or submucous fibroids (TCMR). We have previously evaluated 386 women treated by TCER/TCMR in the period 1992-98. In the present study, we compare this cohort of women with a later cohort in which thermal ablation without resection (NEAS; Novasure endometrial ablation) was included.

Methods: Retrospective evaluation of medical records supplied by follow-up for women operated with TCER, TCMR or NEAS at our hospital during 2006-2014. This cohort was compared to the 1992-98 cohort (n=239 TCER, 11 TCMR and 136 TCER+TCMR).

Results: In the 2006-2014 cohort a total of 786 was operated by the procedures described and 468 (60%) accepted inclusion in the study; 206/468 (44%) TCER, 107 (23%) TCER+TCMR, 21(5%) TCMR and 135 (29%) NEAS.

The women were not significantly different in the two cohorts, or between NEAS and the hysteroscopic procedures (all $p > 0,05$). The NEAS had significantly less perioperative complications and shorter operative time compared to the hysteroscopic procedures, median 13 minutes versus 30 minutes ($p < 0,001$).

More women reported to be satisfied with the treatment, 383/452 (85%) in the last cohort compared to 157/214 (74%), $p = 0,001$ despite that the rate of later hysterectomy was the same, 14% and 15%, $p = 0,922$. Women treated with the NEAS procedure reported the same rate of satisfaction (85%, $p = 0,201$) and had a slightly lower hysterectomy rate (8%, $p = 0,027$) than women treated by the hysteroscopic procedures.

Conclusions: NEAS may be an acceptable alternative to hysteroscopic procedures for treatment of abnormal uterine bleeding.

O41 - Lichen sclerosus and risk of cancer

General Gynaecology

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Introduction/Purpose: *Lichen sclerosus* (LS) is a dermatological disease often manifested in vulvar area. It is sometimes found associated with vulvar squamous cell carcinoma but epidemiological research of their association is scarce.

The purpose of this study was to assess the association of LS with different cancers in a retrospective cohort setting. Special attention was paid to cancers of body parts where LS manifests (i.e. vulva, extragenital skin, oral cavity).

Methods: All women diagnosed with LS (n=7,616) were identified from the Finnish Hospital Discharge Registry from 1970–2012. These patients were linked with subsequent cancer diagnoses from the Finnish Cancer Registry until 2014. Standardized incidence ratios (SIRs) were counted for different cancers by dividing the observed numbers of cancers by expected numbers, which were based on national cancer incidence rates.

Results: In total, 812 cancers arose among LS patients resulting in increased overall cancer risk (SIR 1.13, 95% confidence interval [CI] 1.05–1.21). LS associated with an increased risk of vulvar cancer (182 cases, SIR: 33.6, 95% CI 28.9–38.6). There was no increase in risk of cancers of skin or oral cavity. The risk of vaginal cancer was significantly elevated (4 cases, SIR: 3.69, 95% CI 1.01–9.44). Decreased risk of cancer of uterine cervix and cancer of lung was observed.

Conclusions: LS is associated with an increased risk of vulvar and vaginal cancer. These data are important when designing the care of women diagnosed with LS.

O42 - The risk of breast cancer in women with endometriosis

General Gynaecology

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Introduction/Purpose: The aim this study was to assess the risk of breast cancer in women with surgically verified endometriosis according to the types of endometriosis as the previous study results are conflicting and the different types of endometriosis has rarely been assessed.

Methods: The endometriosis associated diagnoses concomitantly with relevant surgical codes were identified from the Finnish Hospital Discharge Register 1987-2012. Breast cancers were obtained from the Finnish Cancer Registry. After linkage, the cohort of 49,933 women and the main sub-cohorts of ovarian (n=23,210), peritoneal (n=20,187) and deep infiltrating endometriosis (n=2,372) were formed. The follow-up ended in emigration, death or on the 31st of December 2014. Follow-up was 838,685 person-years and Finnish female population served as the reference cohort. The standardized incidence ratio (SIR) and 95% confidence interval (95% CI) was calculated.

Results: The overall breast cancer risk was not increased among women with endometriosis (SIR 0.99 [95% CI 0.94-1.03]), nor was the risk in sub-cohorts of endometriosis: ovarian (0.97 [0.91-1.04]), peritoneal (1.01 [0.93-1.08]) or deep infiltrating endometriosis (0.96 [0.68-1.32]). The increased incidence of breast cancer was observed in young women aged 20-29 years old (4.44 [2.22-7.94]) and decreased incidence in 50-59 years old (0.92 [0.85-0.99]). The ductal histology was shown more often in the age group of 20-29 years olds (4.17 [1.91-7.92]). The risk of carcinoma in situ of the breast was increased (1.25 [1.07-1.44]).

Conclusions: In conclusion, the overall risk of breast cancer was not increased and the possible endometriosis associated risk of breast cancer in young women warrants further studies.

O43 - Reduction in teenage pregnancies – a cross-sectional multinational study

General Gynaecology

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Introduction/Purpose: To describe hormonal contraceptive use, abortion and birth rates among teenagers in the Nordic countries.

Methods: National data concerning abortions and births among all women aged 15-19 years were collected from Denmark, Finland, Iceland, Norway and Sweden (1975-2015). Data on prescriptions for hormonal contraceptives were obtained from Denmark, Norway, and Sweden (2008-2015).

Results: Birth rates declined, with the steepest decline in Norway and Iceland from ≈ 40 births/1000 teenagers to 5 and 8, respectively. The abortion rates fell from 26 to 11 in Denmark, 21 to 8 in Finland, 17 to 13 in Iceland, 20 to 8 in Norway and from 29 to 14/1000 teenagers in Sweden. The highest user rate of hormonal contraceptive was observed in Denmark (51 to 47%) followed by Sweden (39 to 42%) and Norway (37 to 41%). Among 18-19-year-old teenagers hormonal contraceptive use went from 63 to 61% in Denmark, 56 to 61% in Norway and 54 to 56% in Sweden. Combined oral contraceptives were the most commonly used method. The long-acting reversible contraceptives (LARC) implants and levonorgestrel-releasing intrauterine systems, were increasing, especially in Sweden (5 to 13%) and Norway (1 to 7%).

Conclusions: Teenage birth and abortion rates continuously declined in the Nordic countries. There was a high user rate of hormonal contraceptives, with an increase of LARC especially among the oldest teenagers. A multifactorial approach to ensure easy access and a high level of knowledge among teenagers about contraception has played a major role in achieving teenage pregnancy prevention.

O44 - The risk of psychiatric morbidity after teenage childbirth and induced abortion

General Gynaecology

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Introduction/Purpose: Teenage pregnancy is associated with an increased risk of psychiatric morbidity later in life. There does not appear to be difference in this risk whether the pregnancy ends in childbirth or induced abortion. However, long-term consequences of teenage pregnancy on mental health problems are not known. The purpose of the study was to determine the association between adolescent pregnancy and psychiatric morbidity according to the outcome of the pregnancy (childbirth vs. induced abortion).

Methods: This is a Finnish population-based register study involving 13691 nulliparous teenagers who became pregnant between 1987 to 1989; 6652 underwent induced abortion and 7039 delivered. The control group consisted of 41012 coeval women without teenage pregnancy. The follow-up lasted until 31st December 2015. The outcomes of the study were psychiatric diagnoses given after teenage pregnancy.

Results: The risk of psychiatric morbidity was higher among women with a history of teenage pregnancy compared to women without (Adjusted MRR 1.2, 95% CI 1.1 - 1.3), and especially due to psychoactive substance use (Adjusted MRR 1.8, 95% CI 1.6 - 2.1). Girls who had delivered <18 years of age had higher risk of psychiatric morbidity in the future compared to coeval girls who decided to have an induced abortion (Adjusted MRR 1.2, 95% CI 1.0 - 1.3).

Conclusions: Girls with teenage pregnancy face higher risk of mental health problems in adulthood. Induced abortion does not increase the risk, which should be acknowledged when counselling pregnant adolescents.

O45 - Prescription patterns of COCs - do gynecologists comply with guidelines?

General Gynaecology

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Introduction/Purpose: Since 1995, numerous studies have shown an increased risk for venous thromboembolism in users of newer gestagen formulations (high-risk gestagens) than older formulations (low-risk gestagens) of combined oral contraceptives (COCs). In 2011, The Norwegian Medicines Agency issued a warning and recommended COCs with low-risk gestagens to starters. In this study, we examine prescription pattern of COCs to starters by provider.

Methods: From implementation in 2004 through June 2016 the Norwegian Prescription Database comprised nearly 940 000 women having at least one prescription of hormonal contraception. Within this database, we identified 285009 starters of COCs from 2008 through June 2016. Prescriber's profession was categorized as no specialty, general practitioners (GPs), gynecologists, medical doctors (MDs) with other specialties, public health nurses or midwives.

Results: Prescriptions of low-risk gestagens to starters of COCs increased steadily from 2008-2010 (~ 40%) through 2016 (80%). Overall MDs without a specialty and GPs complied significantly better with guidelines than gynecologists. In 2016, 96% of prescriptions by public health nurses/midwives to teenagers were low-risk COCs, relative 86% by MDs without specialty, 75% by GPs and gynecologists, and 60% among MDs with other specialties. Except for teenagers, gynecologists prescribed for all other age groups lower proportions of low-risk COCs to starters than GPs. Over the study years, few women (7-8%) consulted a gynecologist when initiating use of COCs.

Conclusions: Gynecologists play a minor role for prescriptions of COCs to starters. However, gynecologists may improve their prescription pattern to starters in line with national COCs recommendations.

Obstetrics

O46 - Changes in labor outcome after implementing judicious use of oxytocin

Obstetrics

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Introduction/Purpose: Standardized protocols for oxytocin augmentation are recommended. A previous observational study found reduced frequency of emergency cesarean section after implementing a protocol of judicious use of oxytocin augmentation. We aimed to perform an external validation of this study.

Methods: Our study population included nulliparous women with singleton pregnancies ≥ 37 weeks, cephalic presentation and spontaneous onset of labor (Robson group 1). The protocol of judicious use of oxytocin augmentation was strictly implemented from 01.01.2012. Data were collected prospectively. We compared the population in 2012-2013 with 2009-2010 (historic control). Primary outcome was cesarean section rates.

Results: We included 1399 women in the first and 1103 women in the last period. The protocol was followed satisfactorily in 78%. The rate of emergency cesarean sections decreased: 7.1% to 5.9% ($p=0.04$) and operative vaginal deliveries increased: 14.2% to 16.4% ($p<0.01$). The frequency of estimated postpartum hemorrhage $>1000\text{ml}$ increased from 2.0% to 4.9% ($p<0.001$). Rates of infants with pH <7.1 or Apgar scores <7 at 5 minutes were stable. The overall use of oxytocin augmentation was reduced from 49% to 41% ($p<0.01$). Median oxytocin infusion duration was shorter, 68 min vs 51 min ($p<0.01$) and median total oxytocin dose reduced from 0.64 IU to 0.50 IU ($p<0.01$). Estimated median length of labor (Kaplan-Meier) increased by 79 minutes ($p<0.01$).

Conclusions: A protocol of judicious use of oxytocin augmentation reduced the frequency of emergency cesarean sections. This study confirmed results from the previous study, and support the use of standardized oxytocin protocols.

O47 - Discontinuation of intravenous oxytocin in the active phase of induced labour: Cochrane review

Obstetrics

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Introduction/Purpose: The aim was to assess whether discontinuation of oxytocin in the active phase, can improve birth outcomes for women undergoing induction of labour with intravenous oxytocin. The overall effect on the Caesarean delivery (CD) rate is uncertain as continuous stimulation might increase the risk of neonatal asphyxia whereas discontinuation might increase the risk of dystocia.

Methods: We included Randomized Clinical Trials (RCTs) comparing discontinued oxytocin with continuous stimulation in the active phase of labour. Our final literature search was performed January 23, 2018.

Results: We found 11 RCTs eligible for inclusion and one on-going RCT.

Compared with continuous oxytocin stimulation, discontinuation probably reduces the **CD rate**, Relative Risk (RR) 0.71 (95% CI 0.57- 0.87), ten trials, 1922 women. However, in a subanalysis on women who reached the active phase of labour the RR was 0.88 (95% CI 0.62-1.24), four trials, 898 women.

Discontinuation may reduce **uterine tachysystole combined with abnormal foetal heart rate** (RR 0.17, 95% CI 0.05-0.51, three trials, 486 women), make little or no difference to **neonatal intensive care unit admissions** (RR 0.72; 95% CI 0.47-1.09, seven trials, 1572 women), and slightly lengthen **the duration of the active phase of labour** with a mean difference of 32 minutes (95% CI 11-53), nine trials, 1474 women.

Conclusions: Discontinuing oxytocin stimulation in the active phase of labour may reduce the risk of CD and hyperstimulation. The quality of the evidence is low. Among women who reach the active phase of labour discontinuation may have little or no effect on the risk of CD.

O48 - Fetal rotation during vacuum extractions; a prospective cohort study

Obstetrics

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Introduction/Purpose: Early in labor approximately 30% of all fetuses are in occiput posterior position. The main outcome of the study was to investigate fetal head rotation during vacuum extraction. Secondary outcomes were conversion of delivery method, duration of vacuum extraction, umbilical artery pH<7.10 and agreement between clinical and ultrasound assessments.

Methods: From November 2013 to July 2016 we conducted a prospective cohort study in seven European hospitals. Fetal head position was determined with transabdominal or transperineal ultrasound and categorized as occiput anterior (OA), occiput transverse (OT) and occiput posterior (OP) position.

Results: During vacuum extraction 117/119 (98%) remained in OA and two fetuses rotated to OP position. Rotation from OT to OA position occurred in 14/19 (74%) and to OP position in 5/19 (26%). Rotation from OP to OA position occurred in 15/25 (60%) and 10/25 (40%) fetuses remained in OP position. The conversion rate from vacuum to caesarean section or forceps was 10% in the OA group vs. 23% in the non-OA group; $p < 0.05$. The estimated duration of vacuum extraction was significantly shorter in OA fetuses, 7 vs. 10 minutes (log rank test $p < 0.01$). There was no significant difference in umbilical artery pH<7.10 between OA and non-OA position. Cohens Kappa of agreement between clinical and ultrasound assessments was 0.42 (95%CI 0.26-0.57).

Conclusions: Most fetuses in OP or OT positions rotated to OA position during vacuum extraction, but the proportion of failed vacuum extractions from a non-OA position remained high and this needs to be taken into account.

O49 - Lateral episiotomy in vacuum-assisted delivery (EVA) - a randomized trial

Obstetrics

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Introduction/Purpose: Obstetric anal sphincter injury (OASIS) is a serious complication affecting 12-14% of women with vacuum extraction (VE) delivery. The efficacy of routine episiotomy to reduce OASIS at VE is debated. The aim of this trial is to investigate if lateral episiotomy can reduce the OASIS rate at VE in nulliparous women and to assess long-term effects.

Methods: A randomized controlled trial of lateral episiotomy versus no episiotomy at VE in 709 nulliparous women with a singleton, live fetus in cephalic presentation after week 34+0. In allocated women, a lateral episiotomy is cut at crowning, 1-3 cm from the midline, at 60-degrees angle, and 4 cm long. Primary outcome is OASIS by clinical diagnosis. Secondary outcomes are pain, blood loss, other perineal injuries, Apgar, cord pH, and neonatal complications. Web-based questionnaires at baseline, two months, one and five years assess pain, pelvic function, sexual function, quality of life, and birth experience. At one site, pelvic floor anatomy is assessed by 2D/3D ultrasound at 6-12 months. Register-based follow-up will assess mode of delivery and recurrence of OASIS/episiotomy in subsequent pregnancies.

Results: The trial is enrolling at three sites in Sweden. More hospitals are welcome.

Conclusions: The current restrictive view on episiotomy ensures protocol adherence in the control group, but poses a challenge in enrolling patients. The trial may show that lateral episiotomy is protective of OASIS at VE and may change clinical practice at VE. The trial will provide information on patient reported outcomes and pelvic floor anatomy following lateral episiotomy or not at VE.

O50 - Sonographic prediction of outcome of vacuum deliveries: a prospective, multicenter cohort study

Obstetrics

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Introduction/Purpose: Safe management of the second stage of labor is important. Ultrasound has the potential to improve diagnostics and make a subjective assessment objective and reproducible. The aim of the study was to determine whether ultrasound measurements of fetal position and station can predict duration of vacuum extraction, mode of delivery and fetal outcome in nulliparous women with prolonged second stage of labor.

Methods: A prospective cohort study was performed. 222 nulliparous women were included in 7 European maternity units. Fetal head position and station was determined with transabdominal and transperineal ultrasound. Head-perineum distance (HPD) was the transperineal ultrasound used.

Results: Duration of vacuum extraction was significantly shorter in patients with HPD <25 mm. The estimated median duration in women with HPD <25 mm was 6.0 minutes (95% CI 5.2-6.8 minutes) vs 8.0 minutes (95% CI 7.1-8.9 minutes) in women with HPD >25 mm. HPD was associated with cesarean delivery with an area under the curve of 83% (95% CI 4-92%). 73% of the fetuses were in an occiput anterior (OA) position. Only 2.2% of fetuses in OA position and HPD <35 mm vs. 35.3% of fetuses in non-OA position and HPD >35 mm were delivered with cesarean delivery. Umbilical cord arterial pH <7.10 occurred in 1.4% of women with HPD <35 mm compared to 20 % with HPD > 35 mm (p<0.01)

Conclusions: Ultrasound has the potential to predict labor outcome in nulliparous women with prolonged second stage of labor. This information can be used to reassure and guide clinicians in decision making.

O51 - Risk factors for obstetric anal sphincter injury at first and second delivery

Obstetrics

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The author has chosen not to publicise the abstract.

O52 - Severe fatigue after postpartum haemorrhage treated with intravenous iron

Obstetrics

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Introduction/Purpose: The objective of this study is to explore if intravenous iron isomaltoside leads to a better relief of fatigue than current treatment practice with oral iron in women suffering from severe fatigue after postpartum haemorrhage.

Methods: This is a sub-analysis of a single-centre, open-label, randomized controlled 12 weeks trial conducted in women suffering from postpartum haemorrhage. Participants were randomized 1:1 to infusion of 1200 mg iron isomaltoside or current treatment practice with oral iron. We measured fatigue by the Multidimensional Fatigue Inventory (MFI) and Edinburgh Postnatal Depression Scale, and determined haematological and iron parameters. The sub-analysis includes participants with a high fatigue score (MFI physical fatigue score > 15) at inclusion. The primary endpoint was aggregated change in physical fatigue score from inclusion to 12 weeks postpartum and the pre-defined clinically relevant difference in aggregated physical fatigue was 1.8.

Results: A total of 85 women had a high fatigue score at inclusion. The difference in aggregated physical fatigue score from baseline to week 12 was -2.3 (confidence interval 95 %: -3.3; -1.3) ($p < 0.0001$) in favour of iron isomaltoside, i.e. iron isomaltoside reduced fatigue significantly more than current treatment practice with oral iron.

Conclusions: In women with a high fatigue score after postpartum haemorrhage, a single dose of 1200 mg intravenous iron isomaltoside is associated with a statistically significant and clinically relevant reduction in aggregated physical fatigue within 12 weeks after delivery, when compared to current treatment practice with oral iron.

O53 - Team up to save lives: video analysis of teams' management of postpartum hemorrhage.

Obstetrics

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Introduction/Purpose: Little is known about how teams' non-technical performance influences clinical performance in obstetric emergencies like postpartum hemorrhage.

Methods: We assessed 99 video recordings of teams managing real-life postpartum hemorrhage. Exposure was the non-technical score (ATOP); outcomes were clinical performance score (TeamOBS) and major blood loss >1500mL

Results: All performance assessments showed good reliability as the intraclass correlation was 0.97 (95%CI; 0.96-0.98) for the non-technical score and 0.84 (95%CI; 0.76-0.89) for the clinical performance score. Teams with an excellent non-technical score performed significantly better than teams with a poor non-technical score: 83.7% vs. 0.3% chance of a high clinical performance score ($p < 0.001$), 0.2% vs. 80% risk of a low clinical performance score ($p < 0.001$), and 3.5% vs. 31.7% risk of major blood loss ($p = 0.008$). The results remained robust when adjusting for potential confounders like bleeding velocity, etiology, time of day, team size, and hospital. The specific non-technical skills associated with high clinical performance were *vigilance*, *role assignment*, *problem solving*, *management of disruptive behavior*, and *leadership*. *Communication with the patient* and *closing the loop* were of minor importance.

Conclusions: Our study established the importance of non-technical skills in the management of postpartum hemorrhage. We identified specific non-technical skills that should be given priority in education programs aimed at ensuring the highest quality of obstetric care.

O54 - Weight loss reduces recurrence of gestational diabetes mellitus

Obstetrics

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Introduction/Purpose: Weight change has been suggested as one possible mechanism behind gestational diabetes mellitus (GDM), however knowledge is inconsistent. We assessed risk of GDM recurrence by change in Body Mass Index (BMI) from first to second pregnancy.

Methods: Prospective population-based cohort study of 433 652 mothers and their first two pregnancies, registered in the Swedish (1992-2010) and the Norwegian (2006-2014) Medical Birth Registry. Weight change, defined as BMI in second pregnancy minus BMI in first pregnancy, was divided into six categories by units BMI. Relative risks (RRs) were obtained by general linear models for the binary family and adjusted for potential confounders. Analyses were stratified by BMI in first pregnancy (<25 and ≥25).

Results: Overweight women who reduced their BMI by >2 units had an adjusted RR (adj RR) of 0.7 (95%CI 0.6-0.9) for GDM recurrence in second pregnancy, compared to overweight women with stable BMI (-1 to 1). Women with BMI <25 who increased their BMI by 2 to 4 or ≥4 units, had adj RRs 1.3 (95%CI 1.0-1.5) and 1.6 (95%CI 1.3-2.0) for GDM recurrence, compared to women with BMI <25 who were stable in weight. Overweight women who increased their BMI by ≥4 units, had adj RR 1.2 (95%CI: 1.0-1.5) for GDM recurrence in second pregnancy.

Conclusions: Women who were overweight at the start of first pregnancy were likely to avoid recurrence of GDM if they managed to reduce their weight from first to second pregnancy. Gaining weight between pregnancies increased recurrence of GDM independent of BMI in first pregnancy.

Poster

Global Health

P1 - Effects of criterion-based audit on management of prolonged labour

Global Health

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Introduction/Purpose: The aim of the study is to describe the effect of criterion-based audit on monitoring and management of normal and prolonged labour by a prospective intervention study at a referral hospital in northern Tanzania.

Methods: In all 523 labouring women were included before implementation of a criterion-based audit. Criteria for best practice were established in collaboration with staff. Subsequently, data were collected over an eight-week period and actual care compared to the criteria. Results were discussed with staff and a short training was conducted. The data collection was repeated afterwards where 438 labouring women were included. Performance and outcomes before and after the intervention were compared. Main outcome was fulfilment of audit criteria, mode of delivery, knowledge and skills scores.

Results: The vaginal delivery rate increased from 53.9% to 61.6%, (RR=1.14;1.03-1.27), while the caesarean section rate decreased from 46.1% to 38.4%, (RR=0.83;0.72-0.97). Attempted vacuum deliveries increased from 1.7% to 3.9%, (RR=2.26;1.02-5.01). Caesarean section for prolonged labour met the audit criteria in 28.3% before and 40.4% of deliveries after intervention (RR=1.43;0.82-2.48). Caesarean section because of previous scar meeting the criteria increased from 50.8% to 71.9%, (RR=1.42;1.02-1.96). The use of oxytocin before crossing the partograph action line decreased from 76.2% to 47.3%, (RR=0.63;0.45-0.85).

Conclusions: The audit process identified areas of care in monitoring of labour and management of complications that were substandard. The discussion of the findings combined with a short training resulted in improvements. Criterion-based audit should be mainstreamed in strategies for quality assurance of health care.

P2 - Gestational age determination by last menstrual-period and ultrasound in Tanzania

Global Health

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Introduction/Purpose: In Tanzania, gestational age (GA) is mostly determined by last menstrual period (LMP) instead of ultrasound, presumably leading to inaccurate estimates with falsely high proportion of post-term and preterm deliveries. It is known, that accurate GA determination may lead to improved diagnosis and treatment of preterm birth and prevent iatrogenic preterm birth due to labour induction on the wrong indication. The study aimed to compare GA determination by LMP and ultrasound in pregnant Tanzanian women, to examine how dating method affects the proportions born preterm, at term and post-term and assess how maternal characteristics relate to wrongly GA determination by LMP.

Methods: 1123 women attending antenatal care in Moshi, Tanzania were asked about their LMP and were ultrasound examined to determine their exact GA. They were followed till delivery to identify delivery date and birth weight.

Results: According to LMP 16.9% deliveries were preterm and 17.8% post-term. According to ultrasound 7.7% deliveries were preterm and 3.4% post-term. Unplanned pregnancy was associated with increased odds ratio of 3.06 (95%CI:1.91-4.91) for preterm delivery when LMP was used for GA determination instead of ultrasound. Parity 3+ was associated with an increased odds ratio of 2.11 (95%CI:1.15-3.87) for post-term delivery when GA was assessed by LMP.

Conclusions: LMP based GA increased the preterm birth rate two times and the post-term birth rate five times. GA determination by LMP was associated with two times increased odds of preterm delivery among unplanned pregnant women, and three times increased odds of post-term delivery among women with parity 3+.

P3 - International accreditation in ObGyn by commercial organisations does not comply with the actual medical ethic framework and should be abandoned

Global Health

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Introduction/Purpose: To evaluate commercially based international accreditation (CBIA) in ObGyn by organisations such as JCI on both non-normative and normative standards of actual mainstream medical/scientific ethics in the context of evidence based and value based medicine.

Methods: A structured analysis of CBIA based on the principles of beneficence, non maleficence, empowerment, autonomy and utilism.

Results: Stakeholders that take part in CBIA are patients, (para)medical professionals, the commercial organisation and its workers, and the national health systems. CBIA does not conform to evidence based practice as no high quality prospective comparative study has ever proven any benefit for patients, (para)medics in Obgyn, nor the health system (as a proxy for society in general). There is proven maleficence for both patients and health workers as time spent to procedures and registration without benefit is lost for patient-caretaker interaction. Evidence is available that CBIA increases burn-out. Money for patient care is withdrawn and lost to CBIA. From the work of Hofstede and the international GLOBE study it can be demonstrated that the dominant american “check and control” value set presented by commercial accreditation does not coincide with other clearly identified cultural patterns such as the Nordic, the South European and others, resulting in disempowerment and loss of autonomy for patients, health workers and health systems from these non-american cultures.

Conclusions: CBIA such as JCI are not in accordance with medical and scientific ethical standards, can be considered “fashionable nonsense” (Sokal and Bricmont) and should be abandoned.

P4 - Long-term cardiometabolic effects of pre-pregnancy lifestyle interventions in obese women

Global Health

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Introduction/Purpose: The global prevalence of obesity in women continues to rise, leading to increasing cardiometabolic disease rates. The pre-pregnancy period may be a good window of opportunity to improve lifestyle and short-term cardiometabolic health (CMH). The aim of this study was to assess the long-term effects of two pre-pregnancy lifestyle interventions.

Methods: Participants of the LIFestyle and RADIEL pre-pregnancy lifestyle intervention studies with a baseline BMI ≥ 29 kg/m² were eligible for this follow-up study. Both studies randomised between a lifestyle intervention targeting physical activity, diet and behaviour modification or usual care. Outcome assessments were performed six years after randomisation. We performed intention-to-treat and subgroup analyses.

Results: Of the 550 LIFestyle participants, we included 50 intervention and 61 controls, plus 22 intervention and 17 controls of the 127 eligible RADIEL participants. No statistically significant differences were found for body composition, blood pressure, arterial stiffness, fasting glucose and hs-CRP levels in the intention-to-treat analyses, except for a higher HDL (0.1 mmol/L; $p=0.04$) in intervention group of the LIFestyle study compared to controls. LIFestyle study participants randomised to intervention who had successfully reduced $>5\%$ of their weight or reached a BMI <29 kg/m² during the six month intervention ($n=22$) had significantly lower weight (-8.1 kg; $p=0.02$), waist (-8.2 cm; $p<0.01$) and hip circumferences (-4.3 cm; $p<0.01$), glucose (-0.5 mmol/L; $p=0.01$), HbA1c (-4.1 mmol/mol; $p=0.02$) and higher HDL (0.3 mmol/L; $p<0.01$) compared to controls.

Conclusions: A pre-pregnancy lifestyle intervention does not improve long-term CMH of obese women in general. Successful short-term weight-loss did lead to improved long-term CMH.

P5 - Manual vacuum aspiration in the treatment of incomplete abortions in Malawi

Global Health

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Introduction/Purpose: Malawi has a high maternal mortality rate and unsafe abortion is one of the top five causes of maternal death. Incomplete abortion is a common complication after abortion, which can be treated surgically or medically. In the first trimester, manual vacuum aspiration (MVA) is the preferred surgical method because it is safer and cheaper. Still, many hospitals in Malawi continue using curettage, which requires more resources and leads to more complications, in spite of recommendations from WHO and Malawi Ministry of Health. The aim of this study was to investigate if an intervention of training health staff could increase the safer and cheaper method of MVA by 15%.

Methods: A prospective cross-sectional assessment of the pre/post use of MVA was performed at three public hospitals in Malawi. Health personnel at these hospitals were trained in MVA using theory and practice in April 2016. Two hospitals served as controls. Ethical approval was obtained from Malawian and Norwegian Ethics Committees.

Results: The intervention was successful with an overall increase of 21.3% in the use of MVA after one year. The control hospitals only had 3.0% increase during the same time period.

Conclusions: Training health personnel in using MVA is an efficient way of increasing a safer and cheaper method of treating incomplete abortions. However, other factors, such as equipment, is crucial as well.

P6 - MomIT: An innovative ICT-based intervention to maternal weight loss

Global Health

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Introduction/Purpose: The objective of this project is to develop an Information and Communication Technology (ICT) intervention that can assist new mothers to a healthy lifestyle and weight control after childbirth.

The number of overweight and obese postpartum women is increasing. Postpartum weight control is important to prevent inappropriate weight trajectory and associated health consequences of overweight and obesity in a subsequent pregnancy as well as reducing long-term risks of Type2 Diabetes. Women of the childbearing age already use ICT, and in addition ICT-based interventions are being implemented to a higher degree in the health care sector.

Methods: The development of the intervention will be inspired by participatory design. To determine relevant barriers women face in relation to weight control after a pregnancy and to identify their needs with respect to an ICT based intervention, five focus groups with postpartum women, and two focus groups with health professionals, will be made. In addition, three workshops with postpartum women, health professionals, researchers and IT-developers will be carried out. The process will be iterative, which permits researchers and developers to test, and go back and make changes in the intervention, if needed. Nudging will be implemented in the intervention. Nudging can alter people's behaviour in a desired direction and can be a way to empower users. The setting will be at Odense University Hospital.

Results: The expected outcome is an ICT-based intervention that can assist postpartum women to a healthy lifestyle and weight control.

Conclusions: ICT can assist postpartum women to a healthy lifestyle and weight control.

P7 - Pessaries in the management of stress urinary incontinence in Tanzania

Global Health

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Introduction/Purpose: The study aims to describe the acceptance, impact, and complications of pessary treatment among women diagnosed with stress urinary incontinence (SUI) in Tanzania.

Methods: In all 1425 women aged 18-90 years underwent gynaecological examination including a cough stress test with 300 saline-solution in the bladder. Women with positive cough test were offered pessary treatment. In all 48 women were successfully fitted with a pessary. The Urinary Distress Inventory (UDI-6) and Urinary Impact Questionnaire (UIQ-7) were completed at baseline, after 3 months, and after 12–18 months.

Results: Of the women successfully fitted with a pessary, 67% and 41% were by subjective measurement not leaking after 3 months and 12-18 months pessary use. Pessary treatment was associated with a reduction in the overall UDI score from 29.2 at baseline to 25.0 after 12-18 months use. The overall UIQ score was reduced from 52.2 at baseline to 25.0 after 12-18 months use. Vaginal discharge was reported in 50.0% and 37.1% of the women after 3 and 12–18 months use, respectively, while 1% and 12% of the women had signs of infection at 3 and 12–18 months. Some 78% of the women were satisfied with the pessary when interviewed after 12–18 months and 81% wanted to continue using it.

Conclusions: Pessaries can be used for treatment of SUI with excellent satisfaction rates and minimal complications. Based on our finding we suggest that priority is given to implementing programs in LMICs, which aim at identifying women with SUI and offer pessary treatment for those women who are interested.

P8 - Prevention of birth-related perineal trauma and anal and urinary incontinence: results from a criterion-based audit at a referral hospital in Tanzania

Global Health

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Introduction/Purpose: Trauma to the perineum during childbirth is common and can lead to severe complications such as incontinence and pain. Little is known about incidence and how to prevent this in Sub Saharan Africa. The objective of the study was to assess the impact of an intervention in perineal support, diagnosis of perineal trauma and pelvic floor muscle training on incidence of perineal trauma and related complications in Tanzania.

Methods: An uncontrolled, prospective intervention study by criterion-based audit was conducted at a hospital in Tanzania. Included were 552 vaginally delivered women, of whom 80% completed a follow-up interview after three months. Criteria for best practice were established and compared to actual care by prospective data collection. Findings were presented and discussed with staff and a short training intervention was effectuated. Performance and outcomes were compared before and after the intervention.

Results: Perineal support was performed correctly in 67.0% of deliveries after the intervention. The number of women with second degree lacerations decreased after the intervention, RR0.74 CI;0.61–0.90, while more had an intact perineum, RR2.85 CI;1.74–4.69. Anal sphincter lacerations were reduced from 6.6% to 3.4%, RR0.52 CI;0.24–1.14. Pelvic floor muscle training was performed by 0.9% before and 91.6% after the intervention. Urinary and anal incontinence were not significantly reduced. Perineal pain three months after delivery was reduced by 72%, RR0.28 CI;0.15–0.52.

Conclusions: Before the intervention, the incidence of perineal trauma was high and prevention, diagnosis and management were poor, but improved after the intervention.

P9 - Urinary-incontinence and delivery circumstances in Tanzania - a population-based study

Global Health

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Introduction/Purpose: To investigate the prevalence of urinary incontinence (UI), the different UI subtypes and the association between UI and delivery circumstances.

Methods: A cross-sectional population-based study including 1195 women aged 18-90 women living in rural Kilimanjaro. Simple random sampling was done to select villages, households and participants. Community health workers helped in identifying eligible women and trained nursed-midwives conducted face-to-face interviews. Data were analysed using descriptive statistics and bi-variable and multivariable logistic regression modelling.

Results: The overall prevalence rate of UI was 42%. When focusing on the different types of UI, 17% of the women had stress UI, 9% had urge UI and 16% had mixed UI. UI was found to be significantly associated with increasing age OR=2.1(95 CI%:1.4-3.1) and increasing parity OR=2.7(95CI%:1.9-3.9) . In addition, women who in relation to their first delivery had delivered at home or had been in labour for more than 24 hours, had increased adjusted ORs of 1.9(95 CI%:1.32-2.61) and 2.1(95 CI%:1.09-3.97), respectively, for having UI.

Conclusions: UI is common in rural Tanzania and associated with increasing age and parity. In addition, home deliveries and prolonged labour are risk factors of UI. To address the problem of UI, community-based services aimed at increasing awareness and identification of UI should be instituted in health centers in Tanzania and health workers should be educated and trained in available low-cost conservative approaches to threat the condition. These involve behavioural changes, pelvic floor exercise and fitting of urethra pessaries.

Obstetrics

P10 - A birth plan clinic reduced unnecessary cesarean sections without compromising women's birth experience

Obstetrics

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Introduction/Purpose: Cesarean section rates are increasing worldwide, despite WHO's recommendation of cesarean section rates to be held at 10-15% on a population level. The Hospital of Southern Jutland (SHS), Denmark established a birth plan clinic in 2008, to reduce unnecessary cesarean sections. Unnecessary cesarean section is defined as cesarean section performed without medical indication. SHS now has the lowest cesarean section rate in Denmark. This study examines how the birth plan intervention affected mode of birth, birth experience, fear of vaginal birth and satisfaction.

Methods: Cross-sectional study. In this study, we used data collected from 2014 until July 2016, based on questionnaires distributed to the women attending the birth plan clinic at SHS.

Results: A total of 122 participants were included in the study. 76% of the women with a wish for cesarean section, decided to try a vaginal birth after the birth plan intervention. Comparing the group who wished cesarean section and the group who wished vaginal birth, there was no significant difference in birth experience. There was a non-significant reduction in fear of birth. Although satisfaction with the birth plan consultations were all over good, a slightly lower satisfaction was reported among the group who wished cesarean section.

Conclusions: This study shows that the birth plan clinic at SHS succeeded in making women choose a vaginal birth over unnecessary cesarean section, without compromising the birth experience for the majority of the participating women.

P11 - Abnormal cervical cytology is associated with preterm delivery

Obstetrics

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Introduction/Purpose: Increasing evidence suggests that cervical intraepithelial neoplasia (CIN), with or without subsequent treatment, causes preterm delivery. We wanted to explore the association between abnormal cervical cytology of different severity and subsequent obstetric adverse outcomes such as preterm delivery.

Methods: Retrospective population-based and register-based cohort study comprising 19,822 women in the Western Region of Sweden, who had had at least one abnormal cervical cytology (1978-2012) before the age of 46 and a subsequent singleton birth. The control group comprised 39,644 women with normal cervical cytology and a subsequent singleton birth, matched by age and parity. Data was retrieved from the Swedish National Cervical Screening Registry, linked to the Swedish Medical Birth Register. The studied outcomes were preterm delivery before 37 (primary) and 34 gestational weeks, low birth weight (≤ 2500 g), small for gestational age (SGA), preterm premature rupture of membranes (pPROM) and neonatal mortality. Multivariable log binominal regression analyses were applied.

Results: Preterm delivery before 37 weeks was more common among women with abnormal cervical cytology compared with controls, 6% versus 4.5%; adjusted risk ratio 1.30, (95%CI 1.21; 1.40). Low versus high grade abnormal cervical cytology implied a higher risk; 5.8% versus 7% ($p<0.001$). Also preterm delivery before 34 weeks, pPROM and low birth weight, but not SGA and neonatal mortality, were significantly more common in women with abnormal cervical cytology compared with controls.

Conclusions: Abnormal cervical cytology may imply an increased risk of preterm delivery. Further studies are needed to investigate if the risk is related to treatment.

P12 - Alternative medicine and intake of fish-oil supplements is common among Danish, pregnant women

Obstetrics

Tabia Volqvartz¹

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Introduction/Purpose: The safety of many alternative medicines has never been investigated as no strict rule of testing applies despite a teratogenic potential.

A systematic report of the current use of alternative medicine among Danish, pregnant women is lacking. The aim of this study was to assess the prevalence and characteristics of alternative medicine use among Danish pregnant women during the first trimester.

Methods: A total of 297 pregnant women were invited to participate in a prospective cohort study at Randers Regional Hospital, Denmark from June until December, 2016. 225 participants agreed to be enrolled in the study. The pregnant women were interviewed in gestational week 10-16 and completed a questionnaire.

Results: Overall, 22.8% (n=51) consumed at least one type of alternative medicine, the majority consuming it daily (14.7%, n=33). In addition, fish-oil tablets were daily or frequent consumed by 18.8% (n=42). A total of 4.9% (n=11) women reported regularly taking more than one remedy. The maternal consumption of alternative medicine increased with increasing household income, just as the highest prevalence of fish-oil consumption was seen in the group of women with a master degree.

Conclusions: Our study showed that alternative medicine, herbal supplement and fish oil are commonly used by Danish pregnant women. As the potential side -and teratogenic effects of alternative medicine in pregnancy is unclear, it may require attention of health professionals and individual counseling in pregnancy care.

P13 - Association between mode of delivery and postpartum urinary tract infection

Obstetrics

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The author has chosen not to publicise the abstract.

P15 - Behaviour and development screening in children at 7 to 10 years of age born after low or mid pelvic vacuum-assisted delivery

Obstetrics

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Introduction/Purpose: The knowledge of long-term effects in children born after vacuum assisted delivery is poor. The aim of the study was to evaluate behaviour and development at 7-10 years of age in children born after low or mid pelvic vacuum extraction using a validated screening method.

Methods: The cohort consisted of children born by low or mid pelvic vacuum assisted delivery at Karolinska University Hospital between 2007-2009 (n=446). The Five-to-Fifteen Questionnaire (FtFQ) was used as screening method to evaluate behaviour and development. FtFQ is a Nordic questionnaire that comprises statements answered by parents, divided into eight main domains and compared with normative data. Results above 90th percentile stands for obvious difficulties, while results over the 98th percentile stands for severe/major difficulties. FtFQ is used as a validated screening method in clinic and in research.

Results: 58% (n=258) accepted to participate. The response analysis demonstrated no differences between non-responders and responders. In the responding cohort, 34% (n=89) had obvious difficulties in one or more domains ($\geq 90^{\text{th}}$ percentile) compared to the expected less than 10% in the normative group. Children with obvious difficulties had a significant higher rate of excessive and/or failed mid-low vacuum extractions ($p < 0.05$). The exposure of excessive and/or failed vacuum extraction to obvious difficulties was also significant after correction of confounding factors.

Conclusions: 34 % of children born after low or mid vacuum extraction scored difficulties in several domains which is higher than expected. Children with difficulties were also more often delivered by an excessive and/or failed vacuum extraction.

P16 - Breastfeeding and long-term metabolic health: consequence or reverse causality?

Obstetrics

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Introduction/Purpose: Breastfeeding is associated with better long-term metabolic health in the mothers themselves. Overweight and obese women have increased risk of unsuccessful breastfeeding initiation, and overweight and obese women who breastfeed have shorter breastfeeding duration than normalweight women. We aimed to investigate whether breastfeeding *per se* is beneficial for long-term maternal metabolic health, or if pre-pregnancy health affects both breastfeeding ability and long-term metabolic health.

Methods: We used linked data from the Nord-Trøndelag Health Study (HUNT) and Medical Birth Registry of Norway about 1403 women. Logistic regression analyses were used to calculate odds ratios for breastfeeding <3 months by maternal pre-pregnancy metabolic health (BMI, waist circumference). Mixed linear models were used to explore change in metabolic health (BMI, waist circumference) from before pregnancy through a median 12-year follow-up period in women stratified by breastfeeding duration (<3 months, 3-6 months, >6 months).

Results: Pre-pregnancy BMI and waist circumference correlated inversely with breastfeeding duration. At follow-up, different metabolic profiles were observed in women who breastfed <3 months, 3-6 months, and >6 months. These differences were present also before first pregnancy. There was a statistically significant dose-response relation between breastfeeding duration and change in BMI, but the differences between the breastfeeding groups were small. No effect of breastfeeding was observed on change in waist circumference.

Conclusions: Previously reported associations between breastfeeding and future metabolic health may be due to reverse causality. Pre-pregnancy metabolic health affects both breastfeeding ability and long-term metabolic health. The effect of breastfeeding *per se* on long-term metabolic health is minimal, if any.

P17 - Caesarean scar thickness in non-pregnant women as a risk factor for uterine rupture

Obstetrics

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Introduction/Purpose: We studied the association between uterine scar thickness after caesarean section (CS) and the risk of uterine rupture (UR) or dehiscence at subsequent pregnancy.

Methods: In 2009 and 2010, we determined residual myometrial thickness (RMT) six to 15 months after elective CS by transvaginal ultrasonography (TVUS) without installation of saline.

In 2017, we scrutinized the patient's records until delivery or five years after their first CS. Cases of UR or dehiscence were categorized from the CS description, and UR was defined as complete separation of all layers of the uterine scar including the visceral peritoneum. Further, we registered inter-delivery interval, multifetal pregnancy, and mode of delivery.

Results: Within our population of 149 non-pregnant women, 22 had a subsequent vaginal delivery, 39 had a repeat CS. Among these, we found eight cases; one woman with UR and seven women with scar dehiscence. In women with repeat CS, the median RMT in cases were 3.45 (interquartile range (IQR) 2.0-6.5) mm versus 4.6 mm (IQR 3.6-8.7) in non-cases ($p=0.18$), whereas the median proportion of the CS scar niche of the uterine wall in cases were 48 % (IQR 31%-67%) versus 36% (IQR 24%-48%) in non-cases ($p=0.32$).

Conclusions: The applicability of post-caesarean TVUS on the caesarean scar to identify women at risk of uterine rupture remains unclarified and needs further consideration in larger prospective studies.

P18 - Carbetocin or oxytocin for prevention and management of postpartum hemorrhage?

Obstetrics

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Introduction/Purpose:

Postpartum hemorrhage (PPH) is a major cause of maternal mortality and morbidity. Carbetocin, is a newer uterotonic with a longer half-life compared to oxytocin. The purpose of this review was to compare the effectiveness and safety of carbetocin to oxytocin in the prevention and management of PPH in vaginal delivery, emergency and elective cesarean section (CS).

Methods:

A systematic review and meta-analysis including randomized and non-randomized trials published between 1998-2017

Results:

In the management of PPH in vaginal delivery carbetocin reduced the use of additional uterotonics (RR 0.48; 95% CI 0.25 to 0.91) as well as the mean blood loss in milliliters (MD -199.00; 95% CI -380.29 to -17.71).

In the prevention of PPH in vaginal delivery carbetocin reduced the rate of PPH >500 ml (RR 0.53; 95% CI 0.28 to 0.98) and the mean blood loss in ml (MD -25.88; 95% CI -45.70 to -6.07). Carbetocin reduced the use of additional uterotonics in both emergency CS (RR 0.29; 95% CI 0.10 to 0.85) and elective CS (RR 0.30; 95% CI 0.19 to 0.47).

No statistically significant difference was observed in the rate of any adverse effects.

Conclusions:

Carbetocin seems to be a safe and more effective uterotonic than oxytocin in preventing PPH in both vaginal and cesarean delivery. Its implementation could potentially lower the use of additional uterotonics in both emergency and elective CS and lower the mean blood loss and the rates of PPH in vaginal delivery, without a rise in adverse effects.

P20 - Causes and predictors of postpartum blood loss: a cohort study

Obstetrics

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Introduction/Purpose: To describe the distribution of causes of postpartum blood loss depending on the cut-off used to define postpartum haemorrhage, and to describe the association between quantity of blood loss, duration of the third stage of labour, retained placenta and other risk factors.

Methods: Cohort study of two Danish maternity-units including data on all vaginal deliveries between 1 January 2009 and 31 December 2013 (n=43,357). Statistical analyses using univariate and multivariate linear regression.

Results: The distribution of causes depended on the cut-off used to define postpartum haemorrhage. In cases of blood loss ≥ 500 ml retained placenta constituted 12%, lacerations 57% and other causes including atony 31%. In blood loss $\geq 1,000$ ml retained placenta constituted 34%, lacerations 44% and other causes including atony 22%. In blood loss $\geq 1,500$ ml retained placenta constituted 47%, lacerations 37% and other causes including atony 16%. In blood loss $\geq 2,000$ ml retained placenta constituted 53%, lacerations 34% and other causes including atony 14%. Retained placenta was a strong predictor of quantity of blood loss. Duration of the third stage of labour was a weak predictor and the predictive power was reduced further in the multivariate analysis when including retained placenta in the model.

Conclusions: There was a significant difference in distribution of causes depending on the cut-off used to define postpartum haemorrhage. The predictive power of the duration of the third stage of labour was diminished by the influence of retained placenta.

P21 - Cesarean delivery and antibiotics in early childhood do not cause autism

Obstetrics

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The author has chosen not to publicise the abstract.

P22 - Cesarean section rate and complications at Hospital of Southern Jutland compared with Danish cesarean rate and complications over time

Obstetrics

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Introduction/Purpose: In 2008, the overall rate of cesarean sections (CS) at the Hospital of Southern Jutland (SHS) were 18.9%. In order to reduce the CS rate a list of twelve initiatives were introduced, also known as the Aabenraa Model. This model focus on natural childbirth and to only perform CS on medical indication. The aim of this study was to analyze the development of CS rate at SHS compared to national Danish CS rate, and investigate the maternal and fetal complications.

Methods: This epidemiological registry study contains data from two different databases of all births taking place at SHS and nationwide in Denmark, from 1997 until 2015. The data consists of the amount of CS, the distribution of acute and planned CS, and the proportion of uncomplicated births, operative vaginal deliveries and severe neonatal hypoxia. The data is anonymized and collected on hospital level.

Results: The rate of CS in SHS has been decreasing since 2008 from 18.9% to 12.0% in 2015 and is now significantly lower than the national rate at 20.4% in 2015. This is seen particularly in planned CS rate at 4.9%, which is half of the national rate at 9.7%. Simultaneously, on SHS the proportion of uncomplicated births and neonatal hypoxia has stagnated and the amount of operative vaginal deliveries has decreased.

Conclusions: The Aabenraa Model seems to decrease the rate of CS on SHS significantly compared to national Danish CS rate, without increasing the risk of maternal and fetal complications.

P23 - Changes in drinking patterns, attitudes towards and knowledge about alcohol consumption during pregnancy in a population of pregnant Danish women

Obstetrics

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Introduction/Purpose: In 1997, The Danish Health Authority recommended that “it is safest not to drink alcohol when you are pregnant”, and in 1999 adjusted the recommendations to “avoid alcohol in pregnancy if possible; drink no more than 1 drink per day; do not drink every day”. There are only few studies analyzing the change of average alcohol consumption after changes in national recommendations, and no studies comparing the changes in pregnant women’s attitudes towards alcohol consumption during pregnancy. The aim was to evaluate the changes in drinking pattern and attitudes toward alcohol consumption during pregnancy before and after the change of national recommendations.

Methods: This is a cross-sectional study with a representative sample of 1418 women at the beginning of their 2nd trimester, attending antenatal care in 2000 in Aarhus, Denmark, and a comparable sample of 439 women from 1998 in Aarhus. Participants were interviewed about their average alcohol consumption, binge drinking, attitudes towards and knowledge about alcohol consumption during pregnancy. Data collection procedures and the questions were identical.

Results: Participations rates were 91-92%. No differences were seen between participants in 1998 and 2000 regarding maternal characteristics. Overall, there were no differences in average alcohol consumption before and during pregnancy, binge drinking in early pregnancy, attitudes towards and knowledge about alcohol in pregnancy.

Conclusions: After the change of recommendations into a more condoning one, alcohol intake among pregnant women did not change, nor did their attitudes and knowledge.

P24 - Do elite athletes experience more difficult birth than untrained?

Obstetrics

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Introduction/Purpose: To study delivery outcomes in first time pregnant elite athletes and non-athletes.

Methods: We identified female elite athletes through the Icelandic sports federations and public/social media. The athletes were from the highest division possible in their sport, eligible for national or Olympic teams or equivalent and competing in high or low impact sports. Using snowball sampling, women not active in competitive sports were recruited as controls. Participants answered a questionnaire on background and physical activity levels from five years before and up through their first pregnancy. Information on delivery outcome was retrieved from the Icelandic Medical Birth Register. Fischer's exact test was used to compare groups regarding delivery outcome and multiple logistic regression to estimate associations with predictor variables. Odds ratios with 95%CI were calculated.

Results: No significant differences were found between the three groups regarding prevalence of emergency cesarean section or length of 2nd stage of labor. Low impact elite athletes had a significantly higher rate of 3rd and 4th degree perineal tears than the high impact group. When adjusted for predictor variables, logistic regression showed that the only significant association was with higher birthweight (OR1.31, 95%CI 1.09-1.60). For each 100 g increase in birthweight there was a 31% raised risk for 3rd and 4th degree perineal tears. No relation was found between training frequency before and during pregnancy and delivery outcomes.

Conclusions: Participation in competitive sports at elite level appears not to be associated with adverse delivery outcome with regard to pelvic floor trauma.

P25 - Fibre intake and lifestyle characteristics in relation to constipation and heartburn in pregnancy and pregnancy outcome – a questionnaire- based study

Obstetrics

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Introduction/Purpose: Heartburn and constipation are common symptoms in pregnancy. Dietary fibre have beneficial effects on the digestive system. We hypothesized that a high fibre intake may alleviate the symptoms of heartburn and constipation in pregnancy and together with healthy lifestyle decrease adverse pregnancy outcomes. We wanted to investigate the association of dietary fibre intake and lifestyle characteristics to constipation and heartburn in pregnancy and pregnancy outcome.

Methods: 173 women were recruited in this cohort study during the 1st trimester of pregnancy. Participants completed a self- administered questionnaire concerning bowel function, fibre intake and lifestyle characteristics before pregnancy, in pregnancy and post- partum. Post- partum questionnaire contained questions concerning deliveries and newborns.

Results: Participants who used the least fibre (10-17 g/day) had more caesarean sections (OR 1.75) and more complications (Apgar below 7, SGA, treatment in children's department)(OR 1.62). Women who used liquids less than 25 dl/day had more complications (Apgar below 7, treatment in children's department) (OR 2.09) and increased risk for preterm birth or SGA (OR 3.69). Obese (BMI ≥ 30) women had increased risk for labour induction (OR 2.48), caesarean section (OR 3.05) and preterm birth or SGA (OR 2.91).

Conclusions: Results indicated that dietary fibre did not protect from heartburn and constipation in pregnancy. There was no correlation between exercise and pregnancy outcome. However, we found that women who consumed less fibre and liquids or were obese had more caesarean sections and adverse pregnancy outcomes. This implies that sufficient dietary fibre and liquid intake and normal weight may decrease adverse pregnancy outcomes.

P26 - First trimester biochemical markers for early development of preeclampsia

Obstetrics

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Introduction/Purpose: Our aim was to investigate the association between the concentration of the biochemical markers Placental Growth Factor (PlGF), midregional proatrial natriuretic peptide (MR-proANP) and soluble fms-like tyrosine kinase 1 (sFlt-1) in the first trimester of pregnancy and development of early preeclampsia.

Methods: We included women with preeclampsia at Rigshospitalet, Copenhagen, between January 2011 and June 2015. Cases delivered before gestational week 34 because of preeclampsia. We analyzed their stored blood sample from the first trimester screening for trisomy 21 for PlGF, MR-proANP and sFlt-1 using the fully automated Kryptor® Compact Plus. For each case we included at least two controls. Concentrations of the biomarkers in cases and controls were compared by the two sample Wilcoxon rank-sum test.

Results: In total we included 41 cases and 114 controls. All samples were analyzed for PlGF and sFlt-1, while 37 cases and 100 controls were analyzed for MR-proANP.

We found significantly lower concentration of PlGF in samples from women, who delivered before 34 weeks due to preeclampsia (17.47 pg/ml vs 26.92 pg/ml, $p < 0.0001$). There were no statistically significant differences between the concentration of sFlt-1 (605.9 pg/ml vs 703.0 pg/ml, $p = 0.11$) and MR-proANP (37.9 pmol/L vs 40.3 pmol/L, $p = 0.18$) in cases versus controls.

Conclusions: We found that women who deliver before 34 weeks due to preeclampsia have lower concentration of PlGF in first trimester blood samples collected as early as gestational week 8. In contrast, no association was found between the two other biomarkers (MR-proANP and sFlt-1) and early development of preeclampsia.

P27 - Gestational diabetes is associated with an aberrant salivary microbiota composition

Obstetrics

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Introduction/Purpose: Salivary microbiota composition has been associated with adverse pregnancy outcome e.g. preeclampsia and preterm delivery. In non-pregnant an aberrant microbiota composition has been found in patients with type 2 diabetes. Women with gestational diabetes (GDM), have an increased risk of developing type 2 diabetes after pregnancy. In the present study we examined the salivary microbiota of women with GDM and normoglycaemic pregnant women in late pregnancy as well as nine months postpartum.

Methods: In women with GDM (n=50) and normoglycaemia (n=161) salivary microbiota was assessed in third trimester and nine months postpartum by 16S rRNA gene sequencing of the V1-V3 region. Glucose and insulin homeostasis during and after pregnancy was evaluated by a 75g 2-hour oral glucose tolerance test.

Results: Salivary microbiota of women with GDM was only aberrant in two Operational Taxonomic Units (OTUs) in third trimester when compared to normoglycaemic women. Postpartum, eight OTUs were differentially abundant between the women. Richness as observed OTUs, Shannon index and Pielous evenness decreased from late pregnancy to postpartum regardless of metabolic status. Regardless of GDM, several associations between metabolic traits and salivary microbiota composition were identified.

Conclusions: GDM diagnosed in third trimester has little influence on the salivary microbiota composition during pregnancy, but postpartum previous GDM is associated with an aberrant salivary microbiota composition. Regardless of GDM status the bacterial content of the saliva is associated with glycaemic traits indicating that host physiology and a more glucose-rich environment in the mouth influence the presence and abundance of bacterial species.

P28 - Group B streptococci cultured in urine during pregnancy associated with preterm delivery: a selection problem?

Obstetrics

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Introduction/Purpose: To investigate an association between Group B streptococci in urine culture during pregnancy and preterm delivery.

Methods: A population-based cohort from the catchment area of Lillebaelt Hospital, Denmark, during the period January 2002 – December 2012. The cohort of 34,285 singleton pregnancies used in this study was divided into three groups. Group I (N= 249) included women whose urine culture was positive for GBS; group II (N= 5,765) included women whose urine culture was negative for GBS; and group III (N= 28,271) included women whose urine had not been cultured during pregnancy.

Results: We did not find an association between PTD and GBS bacteriuria in the cultured groups (OR=0.89; 95% CI: 0.5-1.4) (Table 1). After controlling for potential confounders, the PTD remained not associated with GBS bacteriuria (adjusted OR=0.99; 95% CI: 0.6-1.6). Combined, the cultured groups (I and II) were associated with a statistically significant higher risk for PTD when compared with the group with no urine specimens taken for culture (OR=1.96; 95% CI: 1.8-2.2 and adjusted OR 1.80; 95% CI 1.6-2.0). The cultured group of women differed considerably from the group of women with no urine specimens taken for culture on the vast majority of variables examined.

Conclusions: No association between asymptomatic GBS bacteriuria and preterm delivery among women with singleton pregnancy and urine specimens cultured during pregnancy was found. Previous suggestions of such association may have been compromised by a selection problem for testing due to a high risk profile of pregnancy complications in pregnant selected for urine culture.

P29 - Heterogeneity of gestational diabetes (GDM) and long-term risk of diabetes and metabolic syndrome – findings from the RADIEL study follow-up

Obstetrics

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Introduction/Purpose: To assess the metabolic health of obese and non-obese women at high GDM risk 5 years postpartum.

Methods: This is a secondary analysis of the 5-year follow-up of the RADIEL GDM prevention study including 333 women at high GDM risk (BMI ≥ 30 kg/m² and/or previous GDM). Five years postpartum metabolic health was assessed including anthropometric measurements, oral glucose tolerance test, lipid metabolism, and body composition as well as questionnaires covering medical history. For the analysis, we divided the women into four groups based on parity, BMI, and previous history of GDM.

Results: Five years postpartum impaired glucose regulation (IFG, IGT, or diabetes) was diagnosed in 15% of the women; 3.6% had type 2 diabetes. The highest prevalence was observed among obese women with a history of GDM (26%) and the lowest prevalence (8%) among primiparous obese women ($p=0.021$). At follow-up 25% to 39% of the obese women fulfilled the diagnostic criteria for the metabolic syndrome, in the non-obese group 11% ($p<0.001$). This was associated with body fat percentage. The non-obese group, however, faced metabolic disturbances (IFG, IGT, diabetes, or metabolic syndrome) at a significantly lower BMI ($p<0.001$). Among those women who were non-obese before pregnancy, 5 years postpartum the obesity prevalence based on BMI was 14% and based on body fat percentage 58%.

Conclusions: The prevalence of impaired glucose regulation and metabolic syndrome is high 5 years postpartum among women at high risk for GDM. There are high risk women also among the non-obese, who develop metabolic derangements already at a lower BMI.

P30 - High use of ginger and licorice among Danish pregnant women during the first trimester

Obstetrics

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Introduction/Purpose: There is an increasing use of licorice as candy and a flavor in the Nordic Kitchen, and use of ginger as an everyday health-booster. Pharmacologically, both licorice and ginger are far from inactive substances. Prenatal exposure to licorice has been linked to increased blood pressure, lower intelligence, ADHD and pubertal advancement. Ginger can affect the cytochrome P450-system and has also been linked to stillbirth and suspected to affect the fetal testosterone metabolism.

The aim of this study was to investigate antenatal use of licorice and ginger among Danish pregnant women during the first trimester.

Methods: A prospective cohort study of 225 pregnant women who completed a questionnaire on lifestyle habits in gestational week 12-16 when attending the prenatal screening program at Randers Regional Hospital, Denmark in June-December 2016.

Results: A minority 12.4% (n=28) did not consume licorice, but 45.6% (n=101) consumed it daily or several times weekly. Women with a bachelor degree had the highest consumption, 91.8% (n=78). The mean birthweight was lower (3362,8g) among children who experienced the highest exposure compared to the non-exposed group (3590g), but non-significant (p=0.287).

Ginger supplements was consumed by 11.2% (n=25), mainly as ginger-shots 7.1% (n=16). Besides, 28.0% (n=7) of those taking ginger also used prescription drugs. Women with increasing maternal age had the highest consumption of ginger (p=0.019).

Conclusions: Consumption of licorice and ginger appears to be common among Danish pregnant women, supporting the need for further investigation into safety of popular nutritional habits and the importance of a personalized counseling about health trends and lifestyle.

P31 - Impact of income and traditional risk factors on gestational diabetes

Obstetrics

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Introduction/Purpose: Findings concerning the impact of socioeconomic status on the risk of gestational diabetes (GDM) are inconclusive. Further, little is known about the simultaneous impact of income and educational attainment on the risk of GDM. The aim of this study is to assess the impact of maternal prepregnancy taxable annual income in primiparous women in combination with traditional risk factors on the prevalence of GDM.

Methods: This is an observational cohort study between 2009 and 2015 including all primiparous 5962 non-diabetic Finnish women aged ≥ 20 years in the city of Vantaa, Finland. We collected data from the Finnish Medical Birth Register, Statistics Finland, Finnish Tax Administration, and individual patient health care records and divided the study population into groups according to five income levels (I to V). Analyses were adjusted by age, BMI, smoking and cohabiting status.

Results: The total prevalence of GDM was 16.5% (n=988). The adjusted prevalence decreased with increasing income level from 19.4% in the lowest level to 12.8% in the highest level ($p < 0.001$ for linearity). The OR for GDM among those in the highest income level compared with those in the lowest income level was 0.58 (95% CI: 0.43 to 0.79; adjusted $p < 0.001$). After the age of 30 years women without GDM had higher income compared with women of similar age who developed GDM. Educational attainment did not have an independent effect on prevalence of GDM.

Conclusions: The relationship between maternal prepregnancy income and risk of GDM was inverse, and not modified by educational attainment.

P32 - Incidence of postoperative infections after cesarean delivery in Denmark

Obstetrics

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The author has chosen not to publicise the abstract.

P33 - Increased induction of labor rate in obese, results in an increase of operative deliveries?

Obstetrics

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Introduction/Purpose: Drammen hospital facilitates approximately 2000 births annually of which around 4 have a BMI $\geq$ 35. Norwegian national obstetric guidelines from 2014 recommends pregnancy follow-up of women with BMI $\geq$ 35 in the specialist health service including induction in the first week after the due-date. In this study we wanted to compare the induction- and operative delivery- rate from the year code of practice was introduced (2014) with the time period 2016-17 at Drammen hospital.

Methods: "Healthy mother-lifelong health for mother and child" a prospective, longitudinal, observational study. It is planned to include 150 patients with BMI $\geq$ 35, who are offered nutritional and fitness advice as well as follow-up with a doctor and a midwife. We have so far included 90 women, of which 61 have delivered. The control group consists of patients with the same BMI category who gave birth at Drammen hospital in 2014, identified through a retrospective review of birth journal (Partus).

Results: Age, pre-pregnancy_BMI, GDM, gestational-age at birth, postpartum hemorrhage cesarean section rate, total-and operative vaginal delivery was almost equal in both groups. The differences were found in; P0% (47.5 vs. 31.4, $p = 0,059$), birth weight (Zscore) (0.047 vs. 0.495, $p = 0,028$), SGA $\leq$ 10 p proportion (18 vs. 4.3%, $p = 0,011$), Induction% (70.5 vs. 45.7, $p = 0,004$), Elective caesarean section (4.9 vs. 14.3%, $p = 0,074$) and acute caesarean section (14.7 vs. 7.1%, $p = 0.16$).

Conclusions: We found significant increase in the inductions from 46 to 70% in this period. The rate of total C-section and operative vaginal deliveries, however, was not increased.

P34 - Increasing the incidence of vaginal delivery in nulliparous women.

Obstetrics

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Introduction/Purpose: Keeping the frequency of Cesarean Section (CS) low in first time mothers with one child in cephalic presentation at term in spontaneous delivery (Robson group 1) or induced labour or planned CS (group 2) is important in keeping the overall rate of vaginal delivery high.

Methods: Interventions:

- Providing the woman with fluid, energy, comfort and mobilization with one-on-one care.
- Continuous CTG e-learning for all staff on the labour ward.
- Completing a list with ideas to solve dystocia in delivery.
- VAS scoring of satisfaction with the birthing experience.
- A special team of obstetricians and midwives for consultations with women with fear of birth.
- Visibly displaying our numbers, e.g. CS rates at the labour ward.

Measurements:

- Outcome: Overall CS rate, rate of CS in Robson group 1 and 2.
- Process: Rate of CS in Robson group 1 and 2 that are taken up for feedback.
- Balance: The rate of children with asphyxia. Satisfaction with the delivery experience.

Results: Run chart showing total CS rate in our population per month from March 2011 to May 2016 was our baseline. There is a tendency towards a lower overall CS rate with a median of 18.6%, but this is not confirmed yet by the run chart rules.

Conclusions: The impact of our changes has primarily shown in the acute CS rate. The rate of planned CS is stable. Satisfaction with the experience on the labour ward is high. It seems that a lot of patience with the progress is needed. The rate of asphyxia did not go up.

P35 - Infant outcome after complete uterine rupture

Obstetrics

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Introduction/Purpose: Complete uterine rupture is a rare peripartum complication often associated with a catastrophic outcome for both mother and child. As uterine rupture is expected to increase due to increased cesarean section rates worldwide, it is important to know more accurately about the outcome following complete uterine rupture. **Objective:** To explore risk factors of poor infant outcome following complete uterine rupture.

Methods: We included births with complete uterine rupture in Norway during 1967–2008 (n = 244 births), identified among 2,455,797 births, using Medical Birth Registry and Patient Administration system. Uterine ruptures were further studied through medical records. We estimated the associations between infant outcomes and demographic and labor risk factors using logistic regression.

The main outcome measure was infant outcome: healthy infant, intrapartum/infant deaths, hypoxic encephalopathy (HE), and admission to the neonatal intensive care unit (NICU).

Results: We identified 109 (44.7%) healthy infants, 56 (23.0%) infants needing NICU admission, 64 (26.2%) intrapartum/infant deaths, and 15 (6.1%) infants with HE. The highest number of intrapartum/infant deaths occurred in 1967-1977 (51.6%) and the fewest in 2000-2008 (15.0%). Unscarred uterine ruptures did not significantly increase intrapartum/infant deaths compared to scarred uterine ruptures. Placental separation and/or fetal extrusion had the highest OR for intrapartum/infant deaths (OR 17.9; 95% CI 7.5-42.4). Time to delivery >30 minutes vs. <20 minutes increased risk of death (OR 16.7; 95% CI 6.4-43.5).

Conclusions: Intrapartum/infant death after complete uterine rupture decreased significantly over the decades. Time to delivery >30 minutes and placental separation and/or fetal extrusion had highest association with intrapartum/infant deaths after complete uterine rupture.

P36 - Intrapartum PCR assay versus antepartum culture for assessment of vaginal carriage of group B streptococci in a Danish cohort at birth

Obstetrics

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Introduction/Purpose: The aim of this study was to compare the performances of two strategies for predicting intrapartum vaginal carriage of group B streptococci (GBS).

Methods: One strategy was based on an antepartum culture and the other on an intrapartum polymerase chain reaction (PCR). We conducted a prospective observational study enrolling 902 pregnant women offered GBS screening before delivery by two strategies. The Culture-strategy was based on vaginal and rectal cultures at 35±37 weeks' gestation, whereas the PCR-strategy was based on PCR assay on intrapartum vaginal swab samples. An intrapartum vaginal culture for GBS was used as the reference standard from which the performances of the 2 strategies were evaluated.

Results: The reference standard showed a GBS-prevalence of 12%. The culture-strategy performed with a sensitivity of 82%, specificity of 91%, positive predictive value (PPV) of 55%, negative predictive value (NPV) of 98%, and Likelihood ratio (LH+) of 9.2. The PCR-strategy showed corresponding values as sensitivity of 83%, specificity of 97%, PPV of 78%, NPV of 98%, and LH+ of 27.5.

Conclusions: We conclude that in a Danish population with a low rate of earlyonset neonatal infection with GBS, the intrapartum PCR assay performs better than the antepartum culture for identification of GBS vaginal carriers during labor.

P37 - Intrapartum ultrasound - a learning study

Obstetrics

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Introduction/Purpose:

The aim of the study was to determine the learning curve of midwives and medical doctors concerning intrapartum ultrasound (ITU).

It's well established that ITU gives important information in addition to traditional digital assessment of fetal descent and position. However, we do not know how much training midwives and medical doctors need to achieve competence in ITU. This knowledge is important before the method is implemented to the daily work at the maternity ward.

Methods: 7 midwives and 6 medical doctors, Department of Obstetrics Aarhus University Hospital, underwent a training program including a theoretical lesson and 2-3 individual supervised scans to ensure competence in use of equipment and principles of assessments. Hereafter, the participants conducted ITU scans on their own and printed at least 3 scans showing position, "Angle of progression" and "Head perineum distance". The prints were evaluated blinded according to an "11 point scale" developed for this study. The participant was certified when 10 point at a single examination was achieved.

Results: We assessed the fraction of participants who obtained certification after two, five and eight unsupervised scans, i.e. their prints were scored 10 or 11.

Medical doctors (n = 6): 66% after 2 scans, 100% after 5 scans.

Midwives (n = 7): 71% after 2 scans, 71% after 5 scans, and 86% after 8 scans

Conclusions: Both medical doctors and midwives learned ITU after a short training program and unsupervised scans. Concerning the training program, our experience was that the midwives needed more basic ultrasound machine training and supervision.

P38 - Intrauterine metformin exposure and metabolic health at 8-years of age

Obstetrics

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Introduction/Purpose: Metformin is increasingly used in pregnancy and passes the placenta. We explored possible effects of intrauterine metformin exposure on metabolic health, in 8-year-old children of women with PCOS.

Methods: Follow-up of children from the PregMet-study - an RCT comparing metformin (2000 mg) to placebo during PCOS pregnancies. The primary endpoint was waist-to-height ratio. Secondary endpoints included head circumference, height, weight, BMI, bioimpedance-determined muscle-mass and percentage body-fat (%BF), s-cholesterol, s-triglyceride, s-HDL-cholesterol, fasting s-glucose, s-HbA1c, systolic- and diastolic blood pressure and heart rate. Anthropometric measurements were converted to standard deviation scores (z-scores).

Results: During April 2014-July 2016 we included 141, 55% of 255 invited, children. Maternal baseline characteristics were comparable between groups. Waist-to-height ratio z-score was higher in the metformin group than in the placebo group [difference in means (d)=0.36, 95% CI 0.06 to 0.67, p=0.021]. Children in the metformin group weighed more [weight z-score d=0.43, 95% CI 0.04 to 0.82, p=0.032], and had higher BMI z-score [d=0.41, 95% CI 0.03 to 0.78, p=0.034]. Length, head circumference, and muscle-mass (kg) did not differ between the groups. %BF tended to be higher [d=3.04, 95% CI -0.58 to 6.67, p=0.099] in the metformin group than in the placebo group. Biochemical analyses, blood pressure and heart rate were comparable between groups.

Conclusions: The increased waist-to-height ratio observed in metformin-exposed offspring indicates central adiposity and a possible risk of inferior metabolic health. However, comparable biochemical markers suggest only limited impact of metformin exposure on metabolic health of 8-years-old children. Implications for adult health are uncertain.

P39 - Intravenous versus oral iron treatment in pregnancy: a study protocol

Obstetrics

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Introduction/Purpose: Iron deficiency (ID) in pregnancy is common and can cause anemia (IDA). There are several clinical consequences of ID and IDA for both mother and fetus. Compliance to oral treatment is often poor. Iron isomaltoside is approved in pregnancy and considered safe. The primary objective is to compare the efficacy of a single dose of intravenous iron with a fixed dose of oral iron to prevent the development of IDA in pregnant women with persistent ID.

Methods: In a single center, open-labelled, randomized trial, pregnant women with persistent ID despite standard oral treatment will be allocated to either a single dose of 1 g of iron isomaltoside or 100 mg ferrous fumarate daily. Healthy women with a singleton pregnancy will be included at gestational age 14+0–19+0. Haematological and iron parameters will be measured and participants will complete the FACIT-fatigue scale and the Short Form (SF)-12, at inclusion and at follow-up visits after three, six, 12 and 18 weeks.

The primary endpoint is a Hb ≥ 11 g/dL throughout the trial. Using a significance level of 5% and setting the power to 80%, we need 100 participants in each treatment group to detect an assumed prevalence of 5% vs. 17.5% with a Hb < 11 g/dL at some point during pregnancy (in the intravenous and oral treatment group, respectively).

Results: .

Conclusions: In this study of women with persistent second trimester iron deficiency we compare a single dose of intravenous iron with daily oral iron for the prevention of subsequent iron deficiency anemia.

P40 - Is time of quickening affected by maternal BMI, abdominal wall thickness and placental site? A prospective study.

Obstetrics

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Introduction/Purpose: To determine if the time of quickening (first sensation of fetal life) was affected by maternal body mass index (BMI) and maternal anterior abdominal wall thickness and secondly, to further validate the effect of parity and placental site.

Methods: A prospective observational study was conducted. At nuchal cord scan, 216 women consented and were informed to note the date of quickening upon first occurrence. BMI was noted. Only women fulfilling the inclusion criteria participated (min. 18 years, understand Danish, placenta anterior or posterior, singleton pregnancy with no major malformation, abortion, intrauterine death, intrauterine growth restriction < GA20, GA > 13+6 at nuchal scan or risk estimate at nuchal scan < 1:300). At malformation scan in GA19-22, date of quickening was reported, abdominal wall thickness was measured by standardized ultrasound measurements and placental location was noted.

Results: Preliminary results show that quickening occurred at GA18+6 for primipara (n=95) and GA16+5 for multipara (n=121).

BMI > 30 postponed quickening approximately two days in primipara (n=16), compared to primipara with BMI < 30. For multipara with BMI > 30 (n=26), quickening occurred five to eight days later than multipara with BMI < 30. With placenta anterior, quickening occurred eight days later than with placenta posterior. Results regarding the effect of abdominal wall thickness and further statistical analyses are expected to be presented at the congress.

Conclusions: Maternal BMI seem to affect the time of quickening, with most pronounced effect for multipara. Parity and placental location, however, still has the most marked effect on time of quickening. The effect of maternal abdominal wall thickness remains unclear.

P41 - Keep it down: noise affects our performance

Obstetrics

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Introduction/Purpose: Studies have shown that noise can cause impaired performance. Therefore, we aimed to investigate whether noise affects clinical performance among obstetric teams managing major (≥ 1000 mL) postpartum hemorrhage (PPH).

Methods: We included video and audio recordings of 96 obstetric teams managing real-life major PPH. Exposure was defined as the occurrence of noise above 90 dB(SPL). The sound level pressures were measured using the software Praat to analyze the audio recordings. Outcome was high clinical performance (≥ 85) as assessed by the TeamOBS-PPH tool

Results: Unexposed teams had a 91.3% (95% CI; 72.0-98.9) chance of high clinical performance, while this figure was 58.9% (95% CI; 46.8-70.3) for exposed teams (p value < 0.001). Controlling for possible confounders did not change the result (team size, bleeding velocity, hospital type, etiology, and time of the day). Typical causes of noise above 90 dB(SPL) were cabin doors slamming, instruments dropping on floor and mother or baby crying.

Conclusions: Our analysis shows that noise in the labor room is associated with impaired clinical performance for obstetrics teams managing PPH.

P42 - Labour in sensory delivery rooms reduce risk of obstetrical interventions.

Obstetrics

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Introduction/Purpose: The concept of sensory delivery rooms was introduced in 2013. These rooms offer programmable calming lights, restful blurred pictures displayed on a wall-sized big screen, and sound effects. Apart from these effects, the rooms are similar to standard delivery rooms.

The aim of this observational study was to analyse the risk of obstetrical interventions among women giving birth in a sensory delivery room vs. a standard delivery room.

Methods: We included nulliparous, term pregnant women having a single baby with a cephalic presentation who were in spontaneous labour and gave birth between March 1st 2014 and July 1st 2015 in North Zealand Hospital, Hillerød. From the medical records information on type of delivery room (sensory or standard) and potential confounders (gestational age, maternal age, comorbidities) and outcomes (obstetrical interventions, obstetrical complication and length of birth) were captured and recorded in a database.

Results: A total of 789 women were included in the study, 313 gave birth in a sensory room and 476 in a standard delivery room.

The risk of a caesarean delivery was significantly decreased when giving birth in a sensory room compared with a standard delivery room (OR, multiple adjusted: 0.57; 95%CI 0.33-0.97); furthermore, the use of oxytocin infusion was also reduced (OR, multiple adjusted: 0.69; 95%CI 0.48-1.00).

Conclusions: This observational cohort study suggests that giving birth in a sensory delivery room could lower the risk of caesarean delivery, potentially reducing the number of such deliveries by one for every 23 patients.

P43 - Long-term cognition and behaviour when born early-term – a systematic review

Obstetrics

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Introduction/Purpose: To systematically review the literature on long-term cognition, school performance, and behaviour at the age of 2 to 19 years among children born early-term (37 weeks, 0 days to 38 weeks, 6 days) compared to full-term (39 weeks, 0 days to 40 weeks, 6 days).

Methods: This systematic review was performed according to the PRISMA Statement. A literature search was performed in September 2017. Databases searched were PubMed, Embase, CINAHL, and Cochrane Library. Randomised controlled trials, cohort studies, and case-control studies were included. We used the Newcastle-Ottawa Scale to evaluate the quality of the studies.

Results: A total of 31 observational studies were included addressing the following outcomes: Cognition (17 studies), school performance (10 studies), and behaviour (11 studies). Children born early-term were at increased risk of lower intelligence score in early adulthood and of attention-deficit/hyperactivity disorder compared to children born full-term. Furthermore, a tendency towards more cognitive problems, more language impairments, and poorer overall school performance was found among children born early-term. Most observed differences between the two groups were rather small and only few reached statistical significance. Confounder control was insufficient for both known and unknown confounding factors associated with or leading to both early-term delivery and later cognitive or behavioural problems.

Conclusions: The observed associations may be explained by cerebral immaturity but they could also be due to other factors associated with early-term delivery. As most studies did not restrict their analysis to non-medically indicated deliveries there is a high risk of confounding by indication.

P44 - Maternal outcome after complete uterine rupture

Obstetrics

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Introduction/Purpose: Objective: To explore risk factors of poor maternal outcome following complete uterine rupture.

Methods: We included maternities with complete uterine rupture after start of labor in all maternity units in Norway during 1967–2008 (n = 247 maternities), identified among 2 209 506 maternities.

Uterine ruptures were further studied through medical records. We estimated the associations between maternal outcomes and demographic and labor risk factors using logistic regression analyses. The main outcome measure was maternal outcome: maternal deaths, healthy mother, peripartum hysterectomy, and severe postpartum hemorrhage without hysterectomy.

Results: There were 247 complete uterine ruptures including 82 unscarred (33.2%) and 165 scarred uteri (66.8%). They resulted in 3 (1.2%) maternal deaths, 88 (35.6%) healthy mothers, 107 (43.3%) women with severe PPH without hysterectomy, and 51 (20.6%) mothers who needed hysterectomy. Rupture outside lower segment (LS) was associated with increased hysterectomy (OR:2.4; 95% CI: 1.3-4.5). Ruptures in unscarred uteri were in the majority outside LS (78.3%). Hysterectomy increased when rupture occurred in unscarred uteri vs scarred uteri (AOR: 2.6; 95% CI: 1.3-5.3), in 1967-1977 (AOR:7.9; 95% CI: 3.5-17.6) vs 2000-2008, at maternal age ≥ 35 years old (AOR: 2.3; 95% CI:1.1-5.0), parity ≥ 3 (AOR: 2.8; 95% CI: 1.2-6.7) and when rupture was detected postpartum (AOR: 2.2; 95% CI: 1.1-4.8).

Conclusions: Hysterectomy after complete uterine rupture decreased significantly over the decades. Unscarred uteri rupture increased hysterectomy risk as they were mostly outside lower segment.

P45 - Maternal outcome in pregnancies after a complete uterine rupture

Obstetrics

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Introduction/Purpose: A complete uterine rupture, which is associated to an immediate high maternal morbidity, complicates labor in one of 200 attempts of trial of vaginal birth after a cesarean section (TOLAC). The aim of this study was to investigate the long-term maternal outcome including obstetric outcome in the pregnancies and deliveries after a complete uterine rupture.

Methods: This retrospective case-control study is a follow-up of a cohort (1997-2008) of 175 women (cases) with a complete uterine rupture during an attempted TOLAC at term, and a corresponding group of 272 women (controls) with no uterine rupture during an attempted TOLAC at term. Follow-up period was from the date of attempted TOLAC to October 2017. Main outcome measures were: Number of subsequent deliveries and the obstetric outcome such as uterine rupture, severe postpartum haemorrhage, abnormal invasive placenta, placenta previa and gestational age. Information from the follow-up period was retrieved from the Danish Medical Birth Registry and the National Patient Registry.

Results: Information was available from 174 (99.4 %) cases and 269 controls (97.8 %). Altogether 33.3 % of the cases (n = 58) and 36.4 % of the controls (n = 98) had ≥ 1 subsequent delivery.

In total 202 deliveries (70 cases/132 controls) were included.

The risk of a subsequent uterine rupture was 5.7% (n = 4) among cases and 0.75% (n = 1) among controls. Additional data from subsequent pregnancies, deliveries and gynecological procedures will be presented.

Conclusions: A complete uterine rupture imposes a risk of adverse pregnancy outcome in future deliveries.

P46 - Misodel® or Angusta® for induction of labour?

Obstetrics

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Introduction/Purpose: In Denmark, every 4th birth is induced. Oral misoprostol (Angusta®) is considered the “drug of choice” for induction. Previous studies have shown that medium time from start of induction to delivery, can be reduced by use of misoprostol vaginal insert compared with dinoproston vaginal insert (Wing, DA, Obstet Gynecol 2013).

The aim of the present study is to compare two different regimes for induction of labor introduced in two different hospitals at the same time.

Methods: In November 2015 we introduced a new guideline in Holbæk Hospital where the first line medication to induce labour for nulliparous women is Misodel®. At the same time the hospital in Næstved introduced a guideline where the medication for induction of labour is Angusta®. We have prospectively collected data from these two centres on nulliparous women to term. A total number of 300 patients.

Results: The study is completed and we will present data on perinatal and maternal outcomes, time from start of induction to delivery, rates of oxytocin stimulation, presence of tachysystole, cesarean section and instrumental vaginal delivery. Data will be stratified for the differences in the women’s characteristics

Conclusions: We still do not have the final results, but look forward to presenting them at the congress.

P48 - Neuroticism is associated with higher antenatal care utilization in obstetric low-risk women

Obstetrics

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Introduction/Purpose: The personality domain of neuroticism is related to higher use of health care services. The aim was to examine the association between neuroticism and the use of charge-free antenatal care (ANC) among obstetric low-risk women, taking into account predisposing characteristics and need factors.

Methods: As part of several obstetrics/gynecology (ObGyn) studies in 2005-2011 in Uppsala, Sweden, 1052 obstetric low-risk (no chronic diseases or adverse pregnancy conditions) women self-rated neuroticism on the Swedish universities Scales of Personality. Medical records for their first subsequent pregnancy were scanned, for somatic and psychiatric health before and during pregnancy, and for ANC: visits to midwife in primary ANC, fetal ultrasounds, prenatal diagnostic procedures, consultations of midwife in specialist ANC, visits to obstetrician/gynecologist, hospital admissions, visits to fear of childbirth clinic, visits to non-ObGyn professionals, and sick-leave. Associations with neuroticism were analyzed with logistic (binary outcomes) or quasipoisson regression (scale outcomes); adjusting for sociodemographic factors, parity, and psychiatric morbidity.

Results: Women with higher neuroticism (58 units increase, equaling the interquartile range) made more visits to midwife in primary ANC (incidence rate ratio (IRR)=1.03, 95% confidence interval (CI) 1.01-1.05), fetal ultrasounds (IRR=1.10, 95%CI 1.04-1.17), consultations of midwife in specialist ANC (IRR=1.17, 95%CI 1.02-1.34), visits to obstetrician/gynecologist (IRR=1.19, 95%CI 1.06-1.34); and had higher likelihood of a visit to fear of childbirth clinic (odds ratio (OR)=2.54, 95%CI 1.69-3.82), visit to non-ObGyn professional (OR=1.30, 95%CI 1.08-1.57), and sick-leave (OR=1.29, 95%CI 1.03-1.63).

Conclusions: Neuroticism was associated with higher ANC utilization among obstetric low-risk women, even when adjusting for predisposing and need variables.

P49 - Neuroticism is not associated with the risk of perinatal outcomes

Obstetrics

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Introduction/Purpose: Neuroticism, or negative affect, relates to several stressors and health problems. However, only few studies have examined its role in perinatal outcomes concerning mother and child. The aim was to assess if neuroticism is associated with obstetric or neonatal complications.

Methods: The Swedish universities Scales of Personality (SSP) was used to assess neuroticism-related personality traits in 1969 primiparous women with singleton pregnancies as part of several obstetric and gynaecological studies in Uppsala, Sweden. Swedish national registers were used to extract the outcomes: mode of delivery, induction of labour, gestational diabetes mellitus (GDM), gestational hypertension, preeclampsia, dystocia, severe lacerations, placental retention, postpartum haemorrhage, premature birth, small for gestational age, large for gestational age, and Apgar score. In logistic regression models, associations between neuroticism and outcomes were investigated, crude and adjusted for maternal age, educational level, height, body-mass index (BMI), year of delivery, smoking during pregnancy, involuntary childlessness, and psychiatric morbidity.

Results: Neuroticism was associated with young maternal age, lower educational level, underweight, overweight, smoking during pregnancy and psychiatric morbidity. High neuroticism was crudely associated with higher risk of GDM and lower risk of vacuum extraction and placental retention. However, adjustment for confounders fully accounted for these associations. Regarding the other obstetric or neonatal outcomes, no associations with neuroticism were shown.

Conclusions: Neuroticism, while associated with age, education, BMI, and psychiatric history, was no risk factor for several adverse obstetric or neonatal outcomes, except for a crude association with GDM, vacuum extraction and placental retention. Results need replication in prospective, population-based settings.

P50 - Number of colony forming units in urine at 35-37 weeks' gestation as predictor of the vaginal load of Group B Streptococci at birth

Obstetrics

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Introduction/Purpose: To evaluate GBS colony numbers in the urine at 35-37 weeks' gestation to predict the load of GBS-colonization of the vagina at birth.

Methods: In this prospective observational study, we included 902 unselected pregnant women. Exposure was GBS colony forming units (CFU) per mL urine at 35-37 weeks' gestation. Outcome was vaginal GBS colonization at birth as assessed by a semi-quantitative culture of a vaginal swab sample (negative, +1, +2, +3).

Results: Bacteriuria with GBS at 35-37 weeks' gestation performed with a sensitivity of 30% concerning any degree of vaginal GBS colonization at birth (31 of 104 cases); 19% for light (+1), 17% for medium (+2), and 52% for high load (+3) vaginal GBS colonization. The colony count in case of GBS bacteriuria at 35-37 weeks' gestation performed with positive predictive values of 35% for $<10^4$ CFU/mL, 70% for 10^4 CFU/mL, and 67% for $>10^4$ CFU/mL.

Conclusions: Even though the urinary GBS CFU at 35-37 weeks' gestation is strongly associated with a high load of vaginal GBS colonization intrapartum, it may not perform satisfactorily as a standalone-screening marker for risk of early-onset GBS disease.

P51 - Outcome in high-risk pregnancies, managed by telemedicine home/self monitoring

Obstetrics

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Introduction/Purpose: To describe maternal and fetal outcome in high-risk pregnancies, managed by telemedicine self/home monitoring.

Methods: All women managed by obstetric self/home monitoring instead of hospitalization or frequent outpatient visits at Aarhus University Hospital 2011-2017

The monitoring was performed by the women themselves, using a Samsung Android tablet PC and surveillance equipment provided by the hospital, and included:

-Maternal parameters (BP/pulse, temp, weight)

-CTG

-Blood samples (CRP, blood glucose)

-Questionnaire (subjective symptoms, fetal movements)

All registrations were assessed and managed by midwives, nurses or doctors at the obstetric department, trained in telemedicine home-monitoring.

Results: 290 singleton pregnancies were managed by self/home monitoring in the study period

In 2015-2017 we included 49, 63 and 70 pregnancies/year respectively

Indications and obstetric results were (weeks/days as mean):

Indications - Pregnancies(n) - GA at inclusion(w) - GA at delivery(w) - Home monitoring(days) -

Intrauterine/Neonatal death(n):

PPROM: 59 - 27.8 - 30.7 - 18 - 6 (5 w/PPROM <24 weeks, 1 w/severe hydrothorax at 20 weeks)

PE : 33 - 33.7 - 35.4 - 9 - 1 (multiple anomalies at 20 weeks)

FGR: 17 - 29.5 - 33.8 - 10 - 0

Risk of PE: 128 - 29.9 - 37.4 - 19 - 0 (23.4% developed PE)

History/other: 30 - 30.6 - 36.8 - 11 - 0

DM/GDM: 23 - 32.9 - 38.3 - 6 - 0

There were no maternal deaths

Totally, home monitoring changed management from hospitalization to home monitoring in 1150 days for the 59 women w/PPROM, and from frequent outpatient visits or hospitalization to home monitoring in 3288 days for the remaining 231 women

Conclusions: Telemedicine self/home monitoring in selected high-risk pregnancies is feasible and safe for mother and child

P52 - Outcome in second pregnancy after HELLP syndrome in first

Obstetrics

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Introduction/Purpose: *Introduction.* HELLP syndrome has an impact on the risk of adverse outcome in subsequent pregnancies. The aim was to study risk of maternal and fetal complications in second pregnancy after HELLP syndrome in the first.

Methods: *Material and methods.* A population based cohort study including women in Norway having their first and second baby (≥ 22 gestational weeks) during 1999 to 2014, registered in the Medical Birth Registry. Women with preeclampsia in first pregnancy were excluded to form the study population ($n=236\ 785$). Odds ratios (ORs) with 95% confidence intervals (CIs) for maternal and fetal outcomes were estimated using logistic regression and adjusted for confounders.

Results: *Results.* Women with a history of preterm HELLP syndrome (<37 weeks) in first pregnancy were at increased risk of placental vascular disorders (preeclampsia, placental abruption and intrauterine growth restriction) in the second pregnancy. The OR for at least one of these outcomes in second pregnancy was 13.3 (CI; 7.9-22.3). The corresponding absolute risk was 25.7%. However, within the same group 92% had a longer gestation in second pregnancy (on average 5.7 weeks), 73.7 % a greater z-score by birthweight (on average +0.62) and 53.9% had a vaginal delivery at term.

Conclusions: *Conclusions.* Women with a history of preterm HELLP syndrome are at increased risk of adverse fetal or maternal outcomes in the next pregnancy. However, most of these women will deliver at term and a most of their babies will have a normal birth weight. A majority will have an uncomplicated pregnancy and delivery.

P53 - Outpatient induction of labour with low-dose misoprostol – a Danish descriptive cohort study 2015-17

Obstetrics

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Introduction/Purpose: Background The rate of induced labour in Denmark 2000-2012 has increased 108% and today one in four deliveries are induced. At Nordsjællands Hospital healthy pregnant women with no complications have since early 2016 been offered post term induction as an outpatient procedure. Simultaneously the local standard procedure changed from 50 µg oral prostaglandin-E1 analogue misoprostol twice or three times a day, to 25 µg 8 times a day.

Aim This study examines the effect of the new procedure (25 µg) compared to the former standard procedure (50 µg) in terms of induction time, fetal outcome, maternal outcome and risk of hyper stimulation.

Methods: Material and method This study comprises a retrospective collection of clinical data from the time period June 2015 to October 2016. Further the study comprises a prospective collection of clinical data from the time period November 2016 to December 2017. The permission to include data prospectively was given by each induced woman who gave her written informed consent to participate. The permission to include data retrospectively was given by the Danish Patient Safety Authority (# 3-3013-1771-1). Further the study was approved by the Danish Data Protection Agency (# 2012-58-0004).

Results: Interim status/results This descriptive clinical cohort study includes 2064 induced deliveries from two periods: 1) The 25 µg cohort: February 2016 to December 2017 n=1104. 2) The 50 µg cohort: June 2015 to January 2016, n=960.

Conclusions: The study with data analyses is ongoing and we will present our results and conclusion at the NFOG Conference 2018 in Odense.

P54 - Overweight, obesity and hyperandrogenism are associated with gestational diabetes mellitus.

Obstetrics

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Introduction/Purpose: Women with polycystic ovary syndrome (PCOS) have an increased risk of gestational diabetes mellitus (GDM), but the respective roles of body weight, PCOS itself and hyperandrogenism are still under debate. The aim was to determine the association of body mass index (BMI), self-reported symptoms or diagnosis of PCOS, and hyperandrogenism with the occurrence of GDM through reproductive life.

Methods: We performed longitudinal analysis of data from a population-based follow-up cohort of women born in 1966 investigated at ages 14, 31, and 46. Two-hundred seventy-nine women with self-reported PCOS-symptoms (oligomenorrhea/hirsutism or both) at age 31 or with formally diagnosed polycystic ovaries (PCO)/PCOS by age 46 were compared with women without self-reported PCOS symptoms or diagnosis (n=1577). We also investigated the association of hyperandrogenism (clinical, biochemical or both) at age 31 with the occurrence of GDM throughout reproductive life.

Results: PCOS itself was not a risk factor for GDM but when combined with overweight/obese (BMI $\geq$ 25 kg/m²) at age 31 (OR=2.43 [95%CI:1.22–4.86]) or 46 (OR=3.04 [95%CI:1.58–5.83]) PCOS was associated with GDM when compared with normal-weight (BMI<25 kg/m²) controls. The association disappeared when comparing overweight/obese women with PCOS to overweight/obese controls. Hyperandrogenism at age 31 was associated with GDM even after adjustment for BMI at age 31 and 46.

Conclusions: Overweight/obesity and hyperandrogenism, but not PCOS *per se*, were associated with an increased risk of GDM. These findings strengthen the importance of weight management in reproductive-age women and suggest an important role of hyperandrogenism in the pathophysiology of GDM.

P55 - Pancytopenia in pregnancy: A Case Report

Obstetrics

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Introduction/Purpose: Pancytopenia is the reduction in all blood cell lines. Severe folate and vitamin B12 deficiency could happen in the grand multigravida but it is uncommon due to dietary supplements. Blood film and bone marrow biopsy can reveal myeloid precursors, nucleated and tear drop red cells, and platelet clumping which can help differentiate between sepsis, HELLP, leukaemia, myelodysplastic syndrome, haemolytic uremic syndrome and thrombotic thrombocytopenic purpura.

Methods: A 40 year old BMI 27 kg/m² parturient (G10P8+1) with asthma and a recent urinary tract infection treated with a two week course of Trimethoprim presented to hospital at 27/40 with a 3 week history of fatigue. Bloods revealed: Hb 58g/L, Plts 69x10⁹/L, WBC 1.8x10⁹/L, MCV 93.8 fl, MCHC 353g/L and blood film showing moderate neutropenia with hypersegmented nucleus, normocytic normochromic anaemia and no platelet clumps. Blood reticulocytes 0.32% (0.2-2%), vitamin B12 <83pg/ml, folate <1.8ng/ml, LDH >3275U/L and normal ferritin. Started on antibiotics, continued to deteriorate with falling platelet count complicated by premature rupture of membranes and led to the normal vaginal delivery of a live baby.

Results: After delivery, haematological parameters improved and by day 8 her bloods were almost normal and negative for viral, autoimmune causes of pancytopenia.

Discharged on oral haematinic supplements with normal bloods month later.

Conclusions: We postulate that pancytopenia was due to trimethoprim in a grand multigravida patient. Whilst UTIs are commonly treated with trimethoprim, there must be a high level of vigilance to recognise patients at risk of folate and vitamin B12 deficiency to prevent harm.

P56 - Perinatal outcomes in pregnancies of women with type 1 diabetes

Obstetrics

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Introduction/Purpose: We evaluated time-trends in pregnancy outcome among Danish women with type 1 diabetes mellitus (T1DM) compared to the background population from 1994 to 2010.

Methods: A nationwide register study of live births in Denmark from 1994 to 2010 (n = 1,165,267). Differences between groups were evaluated by a T- or Chi-squared test. The time-trend for each outcome was calculated using linear regression.

Results: The prevalence of deliveries among women with T1DM increased significantly from 0.25% (n=181) in 1994 to 0.43% (n=288) in 2010 (p<0.001). In 1994 as well as in 2010, women with T1DM exhibited a significantly higher prevalence of preeclampsia, preterm delivery, caesarean delivery, and large for gestational age (LGA) infants. Furthermore they had a higher BMI and age compared with the background population. When evaluating time-trends for pregnancy outcomes from 1994 to 2010 among women with T1DM, we found a significant decrease regarding preterm delivery and LGA infants, approaching background population levels. Planned caesarean delivery decreased significantly from 2003 to 2010. In contrast, the prevalence of preeclampsia as well as the maternal BMI and age increased significantly in both groups.

Conclusions: The prevalence of T1DM during pregnancy is increasing and though the perinatal outcome regarding preterm delivery, LGA infants and planned caesarean delivery has significantly improved from 1994 to 2010, adverse perinatal outcome is still markedly increased compared to the background population. The increasing maternal BMI and prevalence of preeclampsia among women with T1DM need further attention.

P57 - Posterior Reversible Encephalopathy Syndrome in pregnancy - two case reports.

Obstetrics

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Introduction/Purpose: Posterior Reversible Encephalopathy Syndrome (PRES) is a syndrome characterized by a combination of symptoms and radiological findings. The symptoms are varying, including visual deficits, reduced consciousness and seizures. The syndrome is confirmed by cerebral magnetic resonance imaging (MRI) where characteristic lesions are seen as edema in the white matter of the posterior regions of the cerebral hemispheres. In pregnancy, the condition is associated with preeclampsia.

Methods: We present two cases with different clinical manifestations of pregnancy induced PRES.

Results: The first case is of a 26-year-old woman at gestational week 33+2 who presented with general seizures. A computerized tomography of cerebrum (CTC) gave suspicion of metastasis or abscesses. The patient was transferred to a tertiary hospital where she had an uncomplicated cesarean section and MRI confirmed PRES. The second case is of a 35-year-old at gestational week 33+6 who presented with symptoms of preeclampsia. She developed sudden blindness, headache, and confusion. An uneventful cesarean section was performed. CTC gave suspicion of infarcts and cerebral sinus thrombosis. The patient was then transferred to a tertiary hospital to have an MRI performed, that declined the previous findings and confirmed PRES. Both patients were discharged without symptoms, and had complete regression of PRES on follow-up MRI two months later.

Conclusions: In the presented cases CTC imaging was performed initially, which delayed correct treatment as MRI provides the most accurate depiction of the diagnosis. Early diagnosis or suspicion of the diagnosis should imply immediate treatment, which is antihypertensive treatment and delivery by cesarean section in general anesthesia.

P58 - Prediction of severe complications in nulliparous women at term

Obstetrics

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Introduction/Purpose: Nulliparous women with spontaneous onset of labor at term and a single fetus in cephalic presentation (Robson group 1) have higher rates of severe complications compared to equivalent multiparous labors. Many factors influence the incident of complications during labor and the presence and severity of risk markers can be complex to interpret in clinical situations. Thus, there is an unmet need for supporting tools to help predict complications in labor.

The aim is to develop and validate a computerized model for individual prediction of the risk of severe and specific complications in Robson group 1 using machine learning (ML).

Methods: ML represents algorithmic models that train on and learn from data. Once trained, models can make prospective predictions on new data. Our dataset encompasses around 90.000 Robson 1 labors from five labor wards in Copenhagen, Denmark from 1996-2016. The dataset is an absolute composite of ICD-10 codes, historic, demographic, objective and temporal features for each labor extracted from the *Obstetrical Database*, a validated electronic clinical register. We assess the information content of features individually and concertedly to develop prediction models of emergency caesarean, assisted vaginal delivery, postpartum haemorrhage >1000mL, perineal lacerations $\geq$ grade 3a, shoulder dystocia, eclampsia, neonatal acidosis ($\text{pH} \leq 7.1$) and Apgar score ≤ 7 at 5 minutes. The models will be internally and externally validated.

Results: -

Conclusions: These models will provide clinicians with risk estimates of complications for full-term labor of nulliparous women that can be used preventatively. Careful consideration must be given to the limitations of the models prior to clinical testing and implementation.

P59 - Predictors of prolonged intensive care unit treatment in severe pre-eclampsia

Obstetrics

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Introduction/Purpose: Background

Numerous tests – such as 24-hour urine collection, platelet count, liver enzymes, and hemolysis markers - determine the severity of pre-eclampsia. Their ability to predict prolonged treatment at intensive care unit (ICU) has been understudied.

Aim

To evaluate predictive variables of prolonged treatment at ICU in severe pre-eclampsia.

Methods: Methods

Data on standard laboratory values, blood pressure, baseline characteristics, and the duration of the treatment at ICU of women with severe pre-eclampsia during 2004-2008 at Helsinki University Hospital were collected retrospectively from hospital database. The assumed predictors of prolonged ICU admission were determined by logistic regression.

Results: Results

We enrolled 154 women with severe pre-eclampsia. Maternal age median was 31 years (67.5% nulliparous, 14.3% previous pre-eclampsia). Caesarean delivery rate was 93.5%. Mean gestational age at delivery was 31.7 weeks (SD +/-3.1).

Almost half of these women (42.9%) received intravenous magnesium sulphate for prevention of eclampsia. Before initiating this, three women (1.9%) experienced eclamptic convulsions. The median time spent at ICU was 27.6 hours, and the mean duration of overall hospital admission was six days.

After logistic regression analysis, the only variable predicting prolonged treatment at ICU was magnesium sulphate treatment (OR 5.54, 95% CI 1.82-16.87, p=0.003). Maternal age, BMI, systolic or diastolic blood pressure, alanine aminotransferase level, platelet count, severity of 24-hour proteinuria, or diabetes were not associated with prolonged treatment in ICU in multivariate model.

Conclusions: Conclusion

The only predictive factor for prolonged treatment at ICU in severe pre-eclampsia was Magnesium sulphate treatment.

P60 - Prenatal alcohol exposure and risk of Attention-Deficit-Hyperactivity-Disorder (ADHD) in the offspring: a prospective cohort study.

Obstetrics

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Introduction/Purpose: Alcohol is a solvent passing the placental barrier. Hence, prenatal alcohol exposure is a risk factor for neurological damage in the fetus. The aim of this study is to examine the association between prenatal alcohol exposure and Attention-Deficit-Hyperactivity-Disorder (ADHD) among children.

Methods: We included 80,439 live-born singletons from Aarhus Birth Cohort born 1990-2012. Exposures defined as average alcohol intake per week and binge-drinking-episodes during pregnancy were reported by mothers in a questionnaire completed in early pregnancy. Information on binge-drinking was available from 1998 onwards. Time to diagnosis of ADHD among children was obtained from Danish health registries.

Results: We found that 17.1% of the children were exposed to an average intake of at least 1 unit/week during pregnancy; of these, 75.9% being were exposed to 1-2 units/week, 18.4% to 3-4 units/week, 4.8% of 5-9 units/week, and 0.9% to ≥ 10 units/week. Average intake of at least 1 unit/week decreased from 40.1% to 1.0% from 1990 to 2012. Of the 48,097 children with information on binge-drinking-episodes, 36.4% were exposed to binge-drinking: of these, 57.9% were exposed to 1 episode, 25.4% to 2 episodes, and 16.6% to ≥ 3 episodes. The frequency remained stable throughout the period. During follow-up until 2017, we observed an incidence of ADHD of 3.2%. Using Cox regression, hazard ratios for ADHD according to prenatal alcohol exposure will be presented.

Conclusions: Although average intake of alcohol has decreased, many children are still exposed to alcohol especially binge-drinking during early pregnancy. Understanding how these exposures affect the long-term outcomes in the children is pertinent.

P61 - Prenatal exposures and risk for development of PCOS in the offspring

Obstetrics

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The author has chosen not to publicise the abstract.

P62 - Prevalence and treatment of GBS: risk factors versus intrapartum screening

Obstetrics

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Introduction/Purpose: Intrapartum antibiotic prophylaxis (IAP) is administered to prevent transmission of Group B streptococcus (GBS) from mother to child during labor. The indication for IAP is either based on risk factors or on universal screening.

The aim of the study was to estimate the prevalence of GBS at onset of labor and to compare the accuracy of IAP based on a risk factor based strategy versus an intrapartum screening.

Methods: In 700 women referred for intended vaginal delivery, GBS was determined by gold standard culture in vaginal and rectal swabs. The results were blinded and IAP was given to women with risk factors for GBS infection: previous GBS infection, GA < 37+0 weeks or rupture of membranes > 18 hours.

Results: Out of 642 women, who delivered within three days of specimen collection, 134 (20.9%) received penicillin as IAP based on risk factors. The prevalence of GBS at onset of labor was 17.8% (114/642), with 62 women GBS positive in vagina and rectum, 12 in vagina only and 40 in rectum only.

IAP was administered in 32 (28.1%) of the 114 GBS positive women and in 102 (19.3%) of the 528 GBS negative women. The positive predictive value of IAP based on a high-risk profile was 23.9% (32/134), the negative predictive value 83.9% (426/508), and the sensitivity and specificity 28.1% (32/114) and 80.1% (426/528) respectively.

Conclusions: The accuracy of predicting maternal GBS infection from risk factors is low. Intrapartum GBS diagnostics is more precise and specific and does not increase the overall use of IAP.

P64 - Results after 8 months of implementing intrapartum antibiotic prophylaxis based on intrapartum GenomEra® PCR assay for group B streptococci

Obstetrics

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Introduction/Purpose: Early-onset group B Streptococcus (EOGBS) is a rare, but serious condition for newborns. Therefore it has been standard treatment in many countries, including Denmark, to give all laboring women with risk factors antibiotics during labor to prevent EOGBS. The aim of this study was to investigate the feasibility of implementing intrapartum antibiotic prophylaxis (IAP) based on the results of the intrapartum GenomEra® GBS assay performed by midwives.

Methods: All laboring women with one or more risk factors for EOGBS giving birth at the Obstetrics Department at Lillebaelt Hospital, Kolding, Denmark from March 1st to October 31st 2017, were included in this observational study. When one or more risk factors for EOGBS were detected, PCR assay for GBS was performed. Risk factors were: temperature $\geq 38^{\circ}\text{C}$, preterm delivery < 37 weeks gestation, rupture of membranes > 18 hours, previous infant with GBS sepsis, or positive GBS-urea during the ongoing pregnancy. GBS-positive women identified by intrapartum PCR received Penicillin. Women with fever and negative GBS received nevertheless broad spectrum antibiotics.

Results: During the observational period, 2,215 women gave birth, where 364 (16.4%) of them had one or more risk factors for EOGBS. Of those, 255 (71%) were GBS-negative and 102 (29%) were GBS-positive. Of the GBS-positive women, 82 (80%) received Penicillin during labor. Twenty GBS-positive women didn't receive Penicillin, where 13 of them were due to fast delivery and 7 due to various reasons. The neonatal risk of infection is currently under investigation.

Conclusions: There was a markedly reduce in Penicillin use and a more focused treatment was administered.

P65 - Risk evaluation during prenatal care

Obstetrics

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Introduction/Purpose: To identify pregnancies at increased risk for adverse maternal or fetal outcome using a risk assessment table designed for prenatal care.

Prenatal care is usually provided by midwives, family medicine clinicians and/or obstetricians. One of the goals of prenatal care is to identify pregnant women at increased risk of medical or obstetrical complications. Early identification of these women gives the provider an opportunity to discuss these issues and plan their management with the patient and, in some cases, offer interventions to prevent or minimize the risk of an adverse outcome.

Methods: A risk evaluation table for prenatal care was designed by family medicine clinicians in the Reykjavík area, in cooperation with obstetricians. This has been used at the first prenatal care visit for all pregnant women in the greater Reykjavík area, since 2016, to help identify pregnancies at increased risk for pre-eclampsia, hypothyroidism, gestational diabetes or thromboembolism.

Results: Women at increased risk of hypothyroidism or gestational diabetes mellitus are easily identified with the risk evaluation table, and early screening allows for early intervention. Those at increased risk for pre-eclampsia or thromboembolism can get more intensive prenatal care and start relevant treatment if necessary at an early stage.

Conclusions:

Since March 2016 pregnant women in the Reykjavík Area have been offered a standardized risk evaluation at the first prenatal care visit. Thus the emphasis is shifting from identification and treatment of obstetrical problems to their prevention. In the future we aim to audit on how this risk assessment has influenced maternal and fetal outcomes.

P66 - Risk factors for preterm delivery among early onset cancer survivors

Obstetrics

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Introduction/Purpose: Our aim was to assess pregnancy related conditions in female cancer survivors possibly underlying the elevated risk for preterm labor.

Methods: Nationwide cancer and birth registries were merged to identify 1,830 first deliveries of cancer survivors (diagnosed below 40 years of age) and 5,281 first deliveries of matched controls between January 1991 and December 2013. Conditional logistic regression models were used to estimate the risk for pregnancy related conditions adjusting for maternal age, gestational age and smoking.

Results: Survivors had an increased risk for hospitalization during pregnancy (OR 1.48, 95% CI 1.28-1.71), intrahepatic cholestasis (OR 3.10, 95% CI 1.26-7.64), fear of childbirth (OR 2.40, 95% CI 1.41-4.08) and mental disorders and diseases of the nervous system complicating pregnancy and labor (OR 6.72, 95% CI 2.72-16.57).

Among survivors, 180 (9.8%) delivered preterm compared to 374 (7.1%) controls (P<0.001). We found an increased risk for preterm delivery among survivors with vaginal bleeding (OR 1.31, 95% CI 1.06-1.61), pre-eclampsia (1.32, 95% CI 1.07-1.63), gestational diabetes (1.39, 95% CI 1.00-1.93) and fear of childbirth (OR 1.41, 95% CI 1.01-1.97) compared to controls delivering preterm.

Conclusions: Cancer survivors have an increased risk for preterm delivery. Certain pregnancy related conditions, possibly leading to medically induced preterm birth (vaginal bleeding, pre-eclampsia, gestational diabetes and fear of childbirth) seem to be more severe among survivors, since survivors suffering from these conditions more often deliver preterm. Health professionals treating these women should be aware of these risks. In general, however, our results are reassuring when it comes to pregnancies among cancer survivors.

P67 - Risk-based screening combined with a PCR-based test for group B streptococci diminishes the use of antibiotics in laboring women

Obstetrics

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Introduction/Purpose: To assess the performance of a polymerase chain reaction – group B streptococci test (PCR-GBS test) – in deciding antibiotic prophylaxis in term laboring women.

Methods: In this observational study, we enrolled 902 unselected Danish term pregnant women. During labor, midwives obtained vaginal swabs that were used for both GBS cultures (reference standard) and for the PCR-GBS test. Furthermore, we recorded the presence of risk factors for EOGBS (Early Onset Group B Streptococcal disease): (1) Bacteriuria during current pregnancy, (2) Prior infant with EOGBS (3) Temperature above 38.0 C during labor, and (4) Rupture of membranes 18 h.

Results: The prevalence of GBS carriers was 12% (104 of 902), the sensitivity of the PCR-GBS test 83% (86 of 104), and the specificity 97% (774 of 798). Among the 108 with one or more EOGBS-risk factors, GBS was present in 23% (25 of 108), the sensitivity 92% (23 of 25), and the specificity 89% (74 of 83).

Conclusions: In programs that aim to treat all laboring women with vaginal GBS-colonization (12% in the present study) with penicillin, the PCR-GBS will perform well (sensitivity 83% and specificity 97%). In programs aiming to treat only GBS-carriers among those with risk factors of EOGBS, a reduction of penicillin usage by two-thirds from 12% to 4% may be possible.

P69 - Self-detection of preeclampsia by automatic image processing of smartphone videos

Obstetrics

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The author has chosen not to publicise the abstract.

P70 - Severe spastic cerebral palsy declined at term in Denmark 1999-2007

Obstetrics

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Introduction/Purpose: The objective of this study was to analyse trends in prevalence and severity of cerebral palsy (CP) in Denmark in birth years 1999 to 2007.

Methods: Data has been collected uniformly in the Danish cerebral palsy national register nationwide since 1995. Rates in the time periods 1999-2001, 2002-2004 and 2005-2007 covering 585,393 births were analysed by gestational age and subtypes.

Results: Total number of CP cases in the period was 1165. The overall prevalence of CP decreased significantly from 2.1 in 1999-2001 to 1.8 in 2005-2007 per 1000 live births ($p=0.022$). The decline was only significant for children born at term ($p=0.007$) but not for the preterm ($p=0.44$). The decline in children born at term was based on a decrease in bilateral spastic CP ($n=117$ in years 1999-2001 and $n=59$ in 2005-2007). Multidisciplinary obstetric skills training with neonatal resuscitation in Denmark was initiated in 2003 and timely associated with the decrease. The prevalence of unilateral spastic CP did not change, but in the two last time periods more children had a right-sided than left-sided unilateral spastic CP.

Conclusions: The decline in rate of CP seen in 2005-2007 as compared to 1999-2001 was mainly based on fewer cases of severe spastic CP in term infants.

We hypothesize that improved neonatal resuscitation in the delivery room may be responsible for the decrease.

P71 - Short term complications after planned cesarean delivery without medical indication.

Obstetrics

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Introduction/Purpose: To compare short-term maternal and neonatal outcomes among healthy primiparous women with uncomplicated pregnancies having delivered at term by planned cesarean or planned vaginal delivery in Denmark between 2008 and 2016.

Methods: Retrospective cohort study based on data in the Danish Medical Birth Registry and the National Patient Registry including all women without medical diseases or pregnancy complications delivering at term. During the study period, there were 476,319 deliveries of which 145,821 fulfilled the criteria. Data were compared according to intended mode of delivery.

Main maternal outcomes were: death, cardiac arrest, hysterectomy, thrombosis, infections, reoperations, and obstetric anal sphincter injuries. Neonatal outcomes were: death, admittance to NICU, intracranial hemorrhage, treatment with therapeutic hypothermia, respiratory morbidity, and Apgar scores.

Results: Mode of delivery was intended vaginal in 141,782 (97.2%) cases of which 88.6% delivered vaginally and intended cesarean in 4,039 (2.8%) with 90.0% delivering as such. Planned cesarean was associated with an increased rate of transfer (≤ 3 days) to the NICU (4.95% vs. 3.59%; $P < 0.001$) and a significantly higher risk of wound infections (0.17% vs. 0.07%; $P = 0.01$). There were no significant differences in the remaining maternal or neonatal outcomes. Women undergoing PVD had a 4.97% risk of obstetric anal sphincter injuries.

Conclusions: PCD was associated with an increased transfer to the NICU for ≤ 3 days and a slightly increased risk of wound infection compared to PVD.

P72 - Simulation training in intra-partum assessment of fetal head improves accuracy

Obstetrics

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Introduction/Purpose: Assessment of fetal head station and position is at the core of most decisions in the labour room. Several publications have found low accuracy of manual assessment, yet no structured training program exists for this skill. We developed a new method of structured manual examination as part of a skills training program, and wanted to evaluate the effect of simulation training on diagnostic accuracy in a junior doctor.

Methods: We conducted an observational study at Oslo University Hospital, Ullevål, Norway in 2016. 100 labouring women with at least 7 cm cervical dilatation were included. Correlation between ultrasound and manual examination were studied. The junior doctor was given 1.5 hours of simulation training in structured manual assessment, and 50 patients were examined pre- and post-training. Inter-method agreement between the junior doctor and ultrasound pre- and post-training was compared.

Results: Inter-method agreement between manual examination and ultrasound for fetal head position improved after training; Cohen's kappa $k=0.02$ (95% CI 0 to 0.26) pre-training vs. 0.30; (95% CI 0.09 to 0.51) post-training. Prior to simulation training, the junior doctor accurately diagnosed 2/19 (11%) cases of occiput posterior position, vs 11/21 (52%) of cases post-training ($p<0.01$). Agreement between clinical and ultrasound examination for fetal head station also improved; $r=0.59$ (95% CI 0.36 to 0.75) vs. $r=0.76$ (95% CI 0.60 to 0.86).

Conclusions: Even limited simulation training for a junior doctor seems to substantially improve the diagnostic accuracy of manual assessment of fetal head position and station in labour.

P73 - Spontaneous pneumomediastinum and subcutaneous emphysema postpartum in primipara

Obstetrics

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Introduction/Purpose: We present a case of a fit 27-year-old woman primipara, non-smoker, admitted to the hospital in labor at 41 weeks' gestation. She had no previous history of surgery, and took no medication. It had been a normal pregnancy with a 1st stage of labor without any complications. During the 2nd stage of labor she was actively pushing for one hour. Two hours postpartum, the woman developed bloodshot eyes and swelling of neck and cheeks. Six hours postpartum, the patient complained of chest pains, especially in deep inspiration. Finally, subcutaneous emphysema developed from around the mammae up to the cheekbones and with a nasal voice.

Methods: Case report

Results: Case report

Conclusions: The condition is known as Hamman's syndrome with only 200 reported cases and an estimated incidence of 1 in 100,000 deliveries. Spontaneous pneumomediastinum and subcutaneous emphysema is a benign condition that in most cases regresses without further intervention within days. It is most likely due to a rupture of pulmonary alveoli due to a forceful Valsalva maneuver during 2nd stage of labor.

P74 - Study design in obstetrics – a methodological challenge. Incidence of relevant obstetric events and tentative sample size calculations

Obstetrics

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Introduction/Purpose: In high-income countries many obstetric events occur rarely. This presents challenges when trying to demonstrate effects of new interventions.

The objective was to report incidences of relevant obstetric events, and to calculate sample sizes in tentative studies using some rare and a more common obstetric outcome.

Methods: We included all term, singleton, intended vaginal deliveries in Denmark from 2008 to 2015 (N=381,567) retrieved from the Danish Medical Birth Register. We calculated sample sizes necessary for tentative studies to be able to detect risk reductions of 25% and 50% at the 5% level with power 80% and 90%, respectively.

Results: The incidence of Apgar score<7/5 and acute caesarean section was 0.58% and 10.6%, respectively. Using Apgar score<7/5 as outcome, sample size in a tentative randomized controlled trial (RCT) was 108,800 deliveries, and 30,000 deliveries in the exposure group in a cohort study using the total population of 381,567 deliveries as reference group. Using acute caesarean section as outcome, sample size in a tentative RCT was 5034 deliveries, and 1290 deliveries in the exposure group in a cohort study. All calculations were based on risk reduction of 25% and power of 90%.

Conclusions: The incidence of outcome measures affects the sample size. Relevant obstetric outcomes occur rarely, thus large sample sizes are required to gain statistical power. This entails a risk of studies being underpowered or only showing an effect on common outcomes when potentially also having an effect on rare outcomes. Alternative study designs to RCTs or alternative outcomes could be considered.

P75 - The buddy study - a peer support programme after adverse events

Obstetrics

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Introduction/Purpose: Research on how healthcare professionals are affected by adverse events at work consistently conclude that: i) the involved staff may experience depressive symptoms, feelings of guilt, psychological distress, fear and loss of self-esteem following an adverse event, which may lead to secondary traumatic stress, PTSD or burnout, and ii) more research on the effect of better support systems for healthcare professionals is needed. The purpose of this study is to develop an evidence based support programme for 'second victims' (healthcare professionals involved in adverse events).

Methods: The primary study population is midwives, doctors and nurses at the department of ob-gyn at Odense University Hospital (N=300). The project has three phases: 1) Development of the programme (national survey, focus groups and pilot test of seminar), 2) Implementation of the programme in 2018, 3) Evaluation of the programme in 2020.

Results: In the national survey, midwives and doctors experienced low levels of social support from immediate superiors, and higher levels of social support from colleagues after adverse events. Certain trusted colleagues were considered to be 'knowing subjects' in terms of recognizing both the dilemmas in the clinical decision making and the personal agony after an adverse event.

Conclusions: Based on the developmental phase, 'the buddy study' contains a teaching seminar of all staff to qualify the second victim support, and it places an emphasis on the personal relation of self-selected trusted colleagues ('buddies'). Evaluation of the programme will be in early 2020.

P76 - The Childbirth Experience Questionnaire (CEQ) - validation of its use in Denmark

Obstetrics

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Introduction/Purpose: The aim of this study was to translate and validate the Childbirth Experience Questionnaire (CEQ) of Swedish origin in accordance with the COnsensus-based Standards for the selection of health Measurement Instruments (COSMIN) recommendations. The perspective was to develop a robust, validated, Danish tool to evaluate childbirth experience.

Methods: We translated the CEQ from Swedish to Danish according to COSMIN recommendations. The CEQ was tested for face validity among 10 women gave birth. We send the CEQ to 78 women one month postpartum and again 2 weeks later. Demographic and delivery data were used to establish construct validity of the CEQ using the method of known-groups validation. The results of the scored CEQ sent out twice were used to measure test-retest reliability of the CEQ by calculating the quadratic weighted index of agreement between the two scores.

Results: Face validity of the CEQ in a Danish population was demonstrated with all respondents stating that it was easy to understand and complete the questionnaire. A statistically significantly higher CEQ score for subgroups of women known to report a better birth outcome demonstrated construct validity of the CEQ. A weighted kappa of 0.76 demonstrated test-retest reliability of the CEQ.

Conclusions: The Childbirth Experience Questionnaire is a valid and reliable instrument to measure childbirth experience in a Danish population.

P77 - The effect of light versus strict activity restriction in threatened preterm deliveries – a randomised controlled pilotstudy; The ELISTAR study

Obstetrics

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Introduction/Purpose: Maternal activity restriction (AR) is commonly recommended to prevent preterm delivery. The treatment effect of AR is unknown, as only few studies of low quality and with insufficient results have examined the effect. However, the adverse effects of AR are well documented and cause increased risk of a number of both physical and psychological implications for both the women and their families.

Aim To examine the effect of light versus strict AR in threatened preterm delivery.

Hypothesis No difference in the number of days from randomisation to delivery regardless of the degree of AR (light versus strict).

Methods: A randomised controlled multicentre trial (RCT) will include 310 pregnant women in threatened preterm delivery between gestational ages 22-33 weeks in order to detect a minimum difference between the groups of 7 days or more. Participants give their written informed consent and will be randomised to either an intervention of light AR (3 hours daily physical rest and only limited, few household chores are permitted) or to a control group of conventional strict AR (physical rest the entire day and no household chores are permitted). The participants are monitored by an accelerometric device as well as by a project midwife twice weekly.

Results: Interim status The study project is expected to start by the end of 2018 as a pilot RCT in order to demonstrate feasibility and ethical soundness of the main study.

Conclusions: The project is anchored at Nordsjællands Hospital and all Danish obstetric departments with neonatal services will be invited to participate.

P78 - The effect of parity on risk of complications in women with epilepsy: a population based cohort study

Obstetrics

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Introduction/Purpose: Women with epilepsy (WWE) have increased risk of complications in pregnancy with consequences for the mother and child. There are no studies on complications regarding the impact of parity in WWE.

Methods: This was a population-based cohort study of all first and second pregnancies in the Medical Birth Registry of Norway 1999-2013. Pregnancy risks were estimated, and complication rates compared in distinct WWE treatment categories. Outcomes were any hypertensive disorder, bleeding in pregnancy, induction of labour, cesarean section, postpartum hemorrhage and preterm birth.

Results: We examined 361 588 women, of whom 211 248 had a second pregnancy and 1074 (0.5 %) of these had a diagnosis of epilepsy in both pregnancies. Of these, 406 used antiepileptic drugs in both pregnancies with, lamotrigine (N=118), carbamazepine (N=83), valproate (N=44), and levetiracetam (N=27) being the four most common monotherapies. In the second pregnancy, only risk of elective cesarean section (adjusted OR = 1.7, 95% CI: 1.4 -2.0) and induction of labour (adjusted OR = 1.5, 95% CI: 1.2 -1.7) were increased in WWE compared to women without epilepsy.

There was a significant reduction in any hypertensive disorder, mild preeclampsia, emergency cesarean section, postpartum hemorrhage (>500ml), and preterm birth from first to second pregnancy in WWE, and also a significant increase in elective cesarean section.

Conclusions: Second pregnancies in WWE do not represent an increased risk of non-iatrogenic complications, independent of antiepileptic drug use. There is a significant reduction in complications from first to second pregnancy in WWE.

P79 - The impact of tight antihypertensive treatment of true hypertension with white coat hypertension untreated in pregnant women with preexisting diabetes

Obstetrics

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Introduction/Purpose: The impact of tight antihypertensive treatment while leaving white coat hypertension untreated in pregnant women with preexisting diabetes was evaluated.

Methods: Preliminary results of 187 women with preexisting diabetes (106 type 1 and 81 type 2 diabetes) with office and home blood pressure (BP) measured prospectively at mean 10 gestational weeks. The women were divided in three groups: 1) true hypertension (hypertension diagnosed and treated before pregnancy, treated kidney involvement or detected true hypertension with office BP $\geq$ 135/85 mmHg and home BP $\geq$ 130/80 mmHg), 2) white coat hypertension (office BP $\geq$ 135/85 mmHg and home BP<130/80 mmHg) and 3) normotension. Antihypertensive treatment was continued when present before pregnancy and initiated when both office BP $\geq$ 135/85 and home BP $\geq$ 130/80 mmHg to avoid treatment of white coat hypertension. Preeclampsia (office BP $\geq$ 140/90 mmHg with proteinuria and/or symptoms from other organs) was recorded.

Results: True hypertension was diagnosed in 11% (n=21), white coat hypertension in 13% (n=24) and normotension in 76% (n=142). Antihypertensive treatment was given to women with true hypertension and initiated mainly after 28 gestational weeks in 42% of the women with white coat hypertension and 13% of initially normotensive women. Preeclampsia developed in 14% (n=3), 17% (n=4) and 9% (n=12) (NS), respectively.

Conclusions: These preliminary data suggest that using tight antihypertensive treatment in pregnant women with preexisting diabetes, the prevalence of preeclampsia was comparable regardless presence of hypertension in early pregnancy. A high proportion of women with white coat hypertension in early pregnancy initiated antihypertensive treatment in third trimester.

P80 - The macronutrient preload method in gestational diabetes (GDM) - study of Preload® Balance usability and compliance.

Obstetrics

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Introduction/Purpose: Dietary intervention is the first treatment for GDM. Around 25% of patients need additional pharmacologic treatment. The preload method bases on consuming the macronutrient formula 30 minutes before ordinary meal to release of glucagon-like peptide-1 and insulin. This leads to slower gastric emptying, increased satiety, lower blood glucose peak and a more stable postprandial glucose and insulin response.

The aim of the study was to assess the Preload® Balance formula (200 ml yoghurt-like drink) usability and compliance for management of GDM.

Methods: 25 pregnant women (23-47 years, pre-pregnancy BMI 19.5-38.8 kg/m²) with GDM diagnosed at 12-31 gestational weeks agreed to use the formula three times daily for 14 days. Data on regime compliance and blood glucose profile were collected by self-report diaries and medical records.

Results: 17 (68%) women followed the regime >60% during the 2 weeks period. 4 women discontinued the formula use in few days and 4 followed the regime <60%. The most common problems were: bad taste, difficulties to follow the regime, loss or diminished appetite, diarrhea during the first days. Only 5 (20%) were satisfied with the method and would continue the regime for longer time. During the test period the blood glucose remained at target level in all patients.

Conclusions: The compliance of macronutrient preload method using Preload® Balance was low. The main reasons of discontinuing were related with unpleasant taste of the formula, difficulties to follow 30 min before the meal. However, the expected effect to keep blood sugar at target seems to be promising.

P81 - The role of decidual Nrf2-expression in preeclampsia and fetal growth restriction

Obstetrics

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Introduction/Purpose: High levels of reactive oxygen species (ROS) cause oxidative stress, a process central to placental dysregulation in preeclampsia and fetal growth restriction. Lower levels of ROS may serve as signaling molecules. Cross-signaling between fetal trophoblasts and maternal cells in uterine wall decidual tissue is important for proper placental function. The transcription factor Nrf2 is the master-regulator of oxidative stress responses and we have previously identified aberrant transcription of the Nrf2 pathway in decidua from preeclamptic women. We aimed to investigate decidual protein expression of key Nrf2 regulators in maternal and fetal cells in preeclamptic pregnancies with and without fetal growth restriction.

Methods: Decidual tissue from women with preeclampsia and normal pregnancies was collected by vacuum aspiration during caesarean section. Expression of Nrf2 pathway proteins was analyzed by immunohistochemistry and automatically quantified in Matlab. Total antioxidant capacity and oxidative stress levels were measured with the use of spectrophotometry. Gene set enrichment analysis on Nrf2-regulated transcripts was performed in Partek Genomic Suite.

Results: Fetal trophoblasts and maternal decidual cells markedly expressed Nrf2 pathway components, with strongest expression in decidual cells. The level of oxidative stress was higher ($p < 0.001$) in preeclampsia with and without fetal growth restriction compared to normotensive pregnancies, while the total antioxidant capacity did not differ between the groups.

Conclusions: Both maternal and fetal cells in the decidua expressed antioxidant response components. Decidual oxidative stress levels were higher in pregnancies with preeclampsia with and without fetal growth restriction compared to uncomplicated pregnancies.

P82 - Time interval from elective cesarean section to severe complications

Obstetrics

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Introduction/Purpose: Elective cesarean section (CS) is considered a safe procedure. Though, among early postoperative complications, hemorrhage is a major concern. The incidence of severe postoperative hemorrhage, defined by the use of blood transfusion, is around 2%, and the need of re-laparotomy is less than 0.5%. However, studies on the time interval from CS to severe complications are limited. The purpose is to estimate this interval to clarify the recommended duration of inpatient observation.

Methods: This study is a registerbased study based on data from Aarhus Birth Cohort. The population consists of women giving birth by elective CS from 29 Aug. 1996 to 16 Mar. 2012. Women with severe complications after CS are identified and information from their medical records is collected. Severe complications are defined as the need of blood transfusion, re-laparotomy or admission to intensive care unit.

Results: In the study population 6,606 women gave birth by elective CS. Parity was registered in 5,585 women (85%), 3,811 (68%) were multiparous of which 61% had a previous CS. Readmission due to maternal complications within the first 10 postoperative days was registered in 134 patients. Information from the medical records of 791 patients with diagnosis indicating postoperative complications will be analyzed during spring 2018 in order to state the time from CS to intervention following severe postoperative complications.

Conclusions: With this study the time span from elective CS to severe complications will be evaluated. This information can be used in the clinic when planning duration of inpatient observation following elective CS.

P83 - Urinary plasminogen excretion may contribute to preeclampsia pathophysiology

Obstetrics

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Introduction/Purpose: Preeclampsia is characterized by injured renal glomerular filtration barrier causing proteinuria and aberrant filtration of the plasma proenzyme plasminogen. In pre-urine, plasminogen is activated to plasmin. Plasmin may activate the epithelial sodium channel ENaC and cause impaired sodium excretion and contribute to hypertension. An explorative study was conducted to test a positive association between urinary total plasmin(ogen) and development of preeclampsia.

Methods: An observational case-control study of healthy pregnant women. Urine samples were collected longitudinally in 1631 healthy pregnant women 6 times through pregnancy. 30 developed preeclampsia (cases) and were compared to 146 randomly selected healthy pregnant women (controls). Associations between variables and development of preeclampsia were derived from a logistic regression analysis and expressed as odds ratios.

Results: There were statistically significant increased odds of developing preeclampsia in gestational week > 36 with higher levels of urine plasmin(ogen)/creatinin ratio (OR= 2.35 (p=0.02)). U- aldosterone/creatinine ratio did not predict PE at any time. U-albumin/creatinine ratio was positively associated with development of preeclampsia from gestational 33 and throughout pregnancy (OR=14.04 (p<0.01) in week 33-35 and OR=14.15 (p<0.001) > 36 weeks). A significant positive correlation between u-albumin and u-plasmin(ogen) in gestational week 20-24 and in gestational week ≥ 36 was found (correlation coefficient $r=0.24$, $p<0.01$; and $r=0.26$, $p<0.01$ respectively).

Conclusions: Aberrant filtration of plasminogen may contribute to the pathophysiological features of impaired sodium excretion and hypertension associated with preeclampsia late in pregnancy. However, increased urinary albumin levels reveal stronger associations to preeclampsia development compared to urinary plasmin levels.

P84 - Wound infection, dehiscence and risk of early secondary reconstruction following obstetric anal sphincter injury (OASIS)

Obstetrics

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Introduction/Purpose: The aim of this study was to determine the incidence of wound complications after primary repair of obstetric sphincter rupture (OASIS) in a routine care setting with no use of prophylactic antibiotics.

Methods: This prospective study included 96 women with OASIS; 70 with a 3B perineal tear, 10 with a 3C perineal tear, and 16 with a grade 4 perineal tear. Clinical examination including anal ultrasound was performed 1 day, 11 days, and 18 days after delivery.

Results: 32 women received antibiotics due to indications not related to OASIS during delivery or at the time of the sphincter repair. No difference in risk of wound complications was found between women receiving antibiotics and non-treated women.

93% of the women had no wound complications during follow-up. Four women experienced wound infection; one of these women (grade 3B) received antibiotics both during delivery and at the time of the sphincter repair. Three women, all of them with a grade 4 perineal tear, had an early secondary sphincter reconstruction due to wound dehiscence.

Conclusions: In this study of 96 women with OASIS, 93% had no wound complications within the first three weeks after delivery. The risk of wound complications seems higher after fourth degree lesions and routine control two weeks after delivery seems suitable. Moreover, it seems important to inform all women about the risk of wound complications and to perform a clinical examination of patients experiences bowel symptoms after a sphincter repair. Both actions might prevent functional impairment of the anal sphincter following OASIS.

Fetal Medicine

P85 - A Scandinavian Cooperation: Incidence, prenatal detection rate and pregnancy outcome of spina bifida in Denmark compared to Sweden

Fetal Medicine

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Introduction/Purpose: The aim of this study was to assess the incidence, prenatal detection rate and pregnancy outcome of spina bifida (SB) in Denmark (DK) in 2008-2015, and to compare results to available national data from Sweden.

Methods:

Pregnant women with a second trimester scan and a due date between January 1st 2008 and December 31st 2015 were included from the Danish Fetal Medicine Database including their genetic findings, ICD 10-codes and pregnancy outcomes. SB diagnosed pre- or postnatally was identified by ICD 10-codes. Cases not scanned prenatally were obtained from the National Patient Register. SB occulta, lipomyelomeningocele and isolated tethered cord without neurological deficits were excluded. Missing data were obtained from medical records. Livebirth data with myelomeningocele (MMC) in Sweden were obtained from the MMCUP national database.

Results: There were 234 cases with SB in DK in 2008-2015. 89% of cases were detected prior to week 22; 90% of these pregnancies were terminated (ToP); 91% were isolated malformations of which 11% showed abnormal karyotype. The incidence of new-borns with MMC was 1.3:10,000 in Sweden and 0.8:10,000 in DK.

Conclusions: This study showed differences in the epidemiology of SB between DK and Sweden as well as differences in the assessment of data in the different national databases. The incidence of newborns with SB was higher in Sweden than in DK, probably due to differences in uptake of prenatal ultrasound screening. In DK, the prenatal detection rate of SB was high, and among women with a prenatal fetal diagnosis of SB, 90% chose to have ToP.

P86 - Birth weight variants are associated with variable fetal intrauterine growth from 20 weeks of gestation.

Fetal Medicine

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Introduction/Purpose: Fetal intrauterine growth is influenced by complex interactions between the environment and maternal and fetal genes. The aim of this study was to assess the effect of GWAS-identified variants associated with birth weight on fetal growth.

Methods: Fetal growth was estimated by two-dimensional ultrasound scans at 20, 25 and 32 weeks of gestation in 665 pregnancies and growth trajectories were modeled using mixed linear regression. A genetic risk score (GRS) of GWAS-identified birth weight loci was used to test for association with intrauterine growth. The UK biobank was used to test for association with adult metabolic disease.

Results: The GRS was associated with intrauterine growth showing an attenuating effect on the unconditional daily reduction in proportional weight gain of $1.01 \cdot 10^{-5}$ percentage points/allele/day ($p = 9.0 \cdot 10^{-5}$), corresponding to a mean difference of 441 g at 40 weeks of gestation between a child with lowest and highest GRS. Eight variants were independently associated with intrauterine growth throughout the pregnancy, while four variants were associated with fetal growth in the periods 20-25 or 25-32 weeks of gestation. Four of the intrauterine growth variants were associated with type 2 diabetes, hypertension or BMI in the UK Biobank.

Conclusions: Birth weight variants are associated with fetal growth suggesting that the fetal genetic contribution to birth weight is mediated throughout pregnancy. Some variants may be more important for fetal growth in specific gestational weeks. Additionally, this study supports that variants associated with fetal growth may have an impact on development of adult metabolic disease.

P87 - Blood pressure in pregnancy as independent predictor for child health

Fetal Medicine

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Introduction/Purpose: Adequate maternal cardiovascular adaptation during pregnancy is crucial for fetal health, normal delivery and prevention of pregnancy complications, such as preeclampsia.

We aim to investigate whether maternal high blood pressure (BP) or abnormal alterations in BP in pregnancy have an influence on short-term and long-term child health in terms of growth and weight development, and BP.

Methods: The project is based on the data from the Odense Child Cohort study. We will use information about the placental and neonatal weight, maternal BMI, children's growth, and BP development from follow-up studies in the cohort. The maternal BP data was extracted from the medical journals and will be correlated with the blood pressure levels of the children at all visits done so far (3 and 18 months, and 3, 5 years of age). Logistic regression analysis will be performed to assess the odds of being small for gestational age born after a complicated pregnancy compared to children born after normal pregnancies. Associations between maternal blood pressure and different maternal and fetal parameters, such as maternal Vitamin D status, antiangiogenesis (sFlt1/PLGF ratio) as well as placental weight will be assessed.

Results: Expected results: Children born after complicated pregnancies (preeclampsia and gestational hypertension) have higher blood pressure at any time point measured compared to their counterparts born to normotensive mothers. They have higher odds of being born small for gestational age.

Conclusions: Our project will shed new light on the development of pregnancy complications, and long-term cardiovascular consequences both for women's and child health.

P90 - Evaluation of fetal cardiac function by electronic spatiotemporal image correlation (eSTIC)

Fetal Medicine

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Introduction/Purpose: Evaluation of fetal cardiac function by assessment of tricuspid and mitral annular plane systolic excursion (TAPSE and MAPSE) is shown to be sensitive and reproducible. The ultrasound examination is, however, often hampered by fetal movements and suboptimal fetal position. The use of the electronic spatiotemporal image correlation (eSTIC) method may facilitate this.

Objective: To evaluate the use of the eSTIC for assessment of fetal cardiac function.

Methods: Fetal echocardiography was performed in 24 women in gestational week 25/0 to 26/6. TAPSE and MAPSE were measured with conventional 2D M-mode and with eSTIC M-mode. Inter observer variation was estimated by calculating an intraclass correlation coefficient (ICC).

Results: It was possible to obtain measurements of TAPSE and MAPSE by 2D ultrasound and an eSTIC volume in all cases. The eSTIC volume was in general obtained with a shorter time consumption. The mean TAPSE and MAPSE of conventional M-mode was 5.96 mm (sd 0.75) and 4.11 mm (sd 0.65). The mean TAPSE and MAPSE by eSTIC M-mode was 5.52 mm (sd 0.75) and 3.80 mm (sd 0.67). The TAPSE and MAPSE ICCs were 0.79 and 0.81, respectively.

Conclusions: The eSTIC method can be used to estimate TAPSE and MAPSE in 3rd trimester.

P91 - Fetal heart rate variability with hypoxaemia

Fetal Medicine

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Introduction/Purpose: To examine the effect of hypoxaemia on fetal heart rate variability using the instrumented fetal sheep model.

Methods: In this prospective study, 15 pregnant sheep were instrumented under general anaesthesia at a median gestational age of 129 days. After a 5-day recovery, hypoxaemia was induced by attaching the mother to a re-breathing circuit. Continuous measurements of the fetal heart rate were obtained by the analysis of the pulse waves in the catheter in the fetal carotid artery. Matlab software was used for identification and analysis of the pulse to pulse time intervals. The heart rate recordings at baseline and hypoxaemia were analysed to calculate short term variation (STV) in 16 epochs of 3.75sec each, every minute. Phase rectified signal averaging (window length L= 10, T= 2 and Scale S=T) was used to calculate acceleration capacity (AC) and deceleration capacity (DC).

Results: Fetal pO₂ and lactate at baseline were 3.04±0.46 kPa and 2.75±1.51 mM/L respectively. Acute hypoxia was associated with a significant reduction in both these parameters (1.6±0.42 kPa and 4.25±1.98 mM/L respectively). The STV, AC and DC were 1.37±1.13 msec, 1.93±1.14 and 1.5±0.96 respectively at baseline. With hypoxaemia, the values were 1.87±1.29 msec, 2.7±1.98 and 2.27±1.52. The increase in DC was statistically significant (p = 0.027, Wilcoxon signed rank test). Increases in STV (p = 0.173) and AC (p = 0.099) were not statistically significant.

Conclusions: Acute hypoxaemia is associated with a significant increase in the deceleration capacity of the fetal heart rate.

P92 - Impaired RAAS, sodium balance in pregnancy and offspring cardiometabolic health

Fetal Medicine

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Introduction/Purpose: Uncomplicated pregnancy is characterized by high circulating renin-angiotensin-aldosterone. Aldosterone appears to enhance placental growth factor expression and trophoblast cell proliferation, which is necessary for placental development. In contrast to normal pregnancy, aldosterone expression is suppressed in preeclamptic pregnancies. Because RAAS activity is influenced by salt intake, our hypothesis is that chronic high salt intake suppresses aldosterone with implications for placental development and fetal outcome.

Aim 1: To investigate whether diagnosis of preeclampsia or gestational hypertension associates with increased sodium (Na^+) intake (proxy: urinary Na^+ excretion) and decreased aldosterone levels; whether Na^+ and aldosterone levels together with markers of placental dysfunction increase sensitivity and specificity for prediction of pregnancy complications.

Aim 2: To investigate whether maternal Na^+ intake and aldosterone levels associate to placental weight and gestational age-adjusted birth weight.

Methods: The project is based on the data from the Odense Child Cohort study with currently 2500 active families. To analyze urinary Na^+ and aldosterone excretions, we will use a subsample of 637 24-h urine collections from gestational week 28. Information about the children's growth and development will be used from follow-up child studies.

Results: Expected results: Na^+ and aldosterone levels are associated to hypertensive diseases in pregnancy and adverse offspring health, implicated in birth weight and overall children's growth and development.

Conclusions: Our project will shed new light on the development of pregnancy complications. We will try to develop informative algorithms for adverse fetal and maternal outcomes prediction short-term and in the long-term, which will be of importance for preventive and interventional programs.

P93 - Inadvertent Foetal Exposure to Methylene Blue in the First Trimester

Fetal Medicine

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Introduction/Purpose: Foetal exposure to methylene blue in later pregnancy, when used to identify amniotic sacs in multiple pregnancy or facilitate the diagnosis of premature rupture of membranes, has been linked with adverse outcomes. However, evidence regarding the effects of methylene blue exposure during the first trimester is sparse, with only three individual case reports identified in the literature.

Methods: We report the case of one female, who underwent a laparoscopy and dye test in undetected early pregnancy.

Results: This 26-year-old female was investigated for a 20-month history of secondary subfertility. Following an indeterminate HyCoSy, a diagnostic laparoscopy and dye test was booked. The procedure, including intra-uterine injection of methylene blue, was completed without complication and revealed patent fallopian tubes. Four weeks later, and before she could be informed of her results, the patient returned to the hospital following a positive home pregnancy test. Pregnancy was confirmed by a transvaginal ultrasound and the foetus was dated at eight weeks gestation, meaning it would have been three weeks and four days old at the time of the procedure. Despite the operation, the pregnancy was uncomplicated and at 40 weeks a healthy baby boy, weighing 3974g, was born. Three years on, he continues to develop well.

Conclusions: Exposure to potential teratogens can pose the difficult question as to whether termination should be recommended. As for the three cases identified in the literature, we report a good pregnancy outcome and thus seek to provide reassurance that methylene blue exposure in early pregnancy need not adversely affect the foetus.

P94 - Metformin exposure during pregnancy alters the fetal venous liver circulation

Fetal Medicine

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Introduction/Purpose: Fetal exposure to metformin in polycystic ovary syndrome (PCOS) pregnancies was associated with increased head circumference at birth in offspring of overweight/obese mothers, lower birth weight and length in offspring of normal-weight mothers, and higher body mass index in childhood. We hypothesized that those effects could be due to circulatory adaptations during fetal life.

Methods: Women with PCOS were randomized to metformin 2g/placebo during pregnancy in a RCT. A subgroup of participants (N=57) had an extended ultrasound examination at gestational week 32, including vessel diameter and blood flow velocity measurements of the umbilical vein (UV), the ductus venosus (DV) and the portal vein (PV). Blood flow was calculated and normalized for estimated fetal weight (EFW) (flow/kg EFW). Study participants (metformin [N=29] or placebo [N=28] treated) were compared with a low-risk reference population (N=160) by z-score statistics.

Results: Fetuses in the study population had a higher EFW than the reference (0.63 [95% CI 0.44– 0.82]), but had reduced UV and DV blood flows, and lower normalized UV, DV, PV and total venous liver blood flows compared with the reference.

Participants randomized to metformin had reduced UV (-0.61 [95% CI -1.24–0.03], DV (-0.71 [95% CI -1.25– -0.18]), and normalized total venous liver flow (-0.66 [95% CI -1.21– -0.10]) compared to a reference population.

Normalized UV, DV and PV flows were reduced in both the metformin and placebo group.

Conclusions: Metformin exposure during pregnancy altered the fetal venous liver circulation, which may affect growth and metabolism.

P95 - Non-invasive fetal electrocardiography (fECG) in gestational week 32.

Fetal Medicine

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Introduction/Purpose: Aim:

To detect accurate fetal R-waves by noninvasive fetal electrocardiography (fECG) in week 32.

Background:

Because of its isolating effect, the vernix caseosa complicates noninvasive fECG especially between week 28-32. It is crucial to this new fetal surveillance method, that recordings are reliable in these critical weeks.

fECG has great potential as fetal surveillance. Reliable analyses of beat to beat fetal Heart Rate Variability (fHRV) depend on R-wave detection with milliseconds of accuracy, why ultrasound and thereby conventional CTG is not suitable.

Methods: A new high-performance and high-accuracy bio signal amplifier (Viewcare A/S) with a sampling rate at 8000 Hz was used. fECG was detected by five electrodes placed on the maternal abdomen. Data was recorded in a portable device, and transmitted wireless to a computer.

Results: In a pilotstudy the first Non-invasive fetal ECG recordings were performed in 2 normal pregnancies both in week 32. When 50 Hz noise and maternal QRS-complexes were removed fetal R-waves were detected throughout recordings.

Conclusions: These high quality non-invasive fetal ECG recordings in a very important, but also difficult gestational week, may form the basis of improvement in fetal surveillance. Although the method still needs to be tested in a larger population, these new recordings brings optimism to this field of fetal surveillance with fECG.

P96 - Reference values for pH in umbilical cord arterial and venous blood and Apgar score from 34 to 42+ gestational weeks.

Fetal Medicine

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Introduction/Purpose: Despite much literature on reference values of acid-base status in cord blood at birth, there are yet no studies performed to determine gestational age-dependent references in venous blood at term and no studies on preterm acid-base standards. In addition, even though the Apgar score is widely used as an accepted and convenient method for reporting the status of the newborn infant immediately after birth, the normal distribution of Apgar score at term and preterm has yet to be determined.

Methods: After excluding all cases with Apgar score <10 at 5 minutes and all non-spontaneous/non-vaginal deliveries, our final cohort comprised 18584 paired cord samples with complete and validated data. Associations between continuous variables were investigated with simple linear and polynomial regression and a two-sided P value <0.05 considered significant.

Results: Distribution of Apgar score varied according to gestational age with lower scores related to the earlier gestational weeks. On the other hand, umbilical arterial and venous pH was found to decrease with higher gestational age ($p < 0.001$).

Conclusions: Both umbilical arterial and venous pH decrease linearly with increasing gestational age which is a phenomena that can be attributed to maturation of the fetuses acid-base balance mechanisms.

Reproduction

P98 - Changes in human chorionic gonadotropin (hCG) as a predictor for live birth among women with recurrent pregnancy loss (RPL)

Reproduction

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Introduction/Purpose: hCG increase in early pregnancy is used to differentiate between viable and non-viable pregnancies. The evidence behind this practice, however, is limited. A small study (n=20) showed a doubling time for hCG of 2 days for intrauterine pregnancies. This rate is often used clinically. Other studies have addressed this question but with inconsistent results.

No studies have evaluated the change in hCG in RPL patients (defined by ≥ 3 pregnancy losses (PL)), despite this being an important part of RPL care.

Methods: This was a retrospective study. hCG was measured in two serum samples few days apart during gestational week 4-7 in 399 women seen in our RLP Unit from 2008-2016.

Logistic regression analyses investigated the change in hCG according to pregnancy outcome adjusting for maternal age, number of PL, and between-sample interval.

Results: Pregnancy outcome: 261 live births, 100 miscarriages and 38 non-visualized PL.

Study population results (means): Age 35.0 years; number of PL 3.8; gestational age at first hCG sample 4⁺⁴.

A 20% daily increase in hCG predicted a 65% chance of live birth whereas a 40% increase predicted a 70% chance of live birth. Increases above 40% did not add significantly to prognostic value.

The association between change in hCG and live births was weaker for women with ≥ 3 losses, and was strongest for age <30years. The probability of live birth decreased with increasing number of PL.

Conclusions: A daily hCG increase of 20% and 40%, respectively, can predict a 65% and 70% chance of live birth among women with RPL.

P99 - Chronic endometritis in women with recurrent pregnancy loss

Reproduction

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Introduction/Purpose: The endometrial factor in women with recurrent pregnancy loss (RPL) is under constant discussion including chronic endometritis (CE). Women with RPL often have had several evacuations (medical with Misoprostol or D&C), which increases the risk of endometritis. CE is characterized by the presence of plasma cells within the endometrial stroma. The prevalence of CE in women with RPL varies from 7-58%. Since plasma cells are absent in non-pathological human endometrium, these unusual local infiltrate might have a negative impact on the endometrial receptivity and pregnancy outcome. We investigated the prevalence of CE among Danish women with RPL.

Methods: Women with three or more consecutive first- or second trimester pregnancy losses and no known uterine abnormalities or pathologies were recruited. A diagnostic office hysteroscopy (OH) with biopsies during the proliferative phase of the menstruation cycle were performed for all the patients. CE was diagnosed with the present of plasma cells in the biopsy

Results: 77 women with RPL were included. Histological diagnoses: 2/77 (2, 5 %) had signs of CE, with the presence of plasma cells in the biopsy.

Conclusions: Compared to earlier reports on CE in RPL women we found a much lower incidence in our Danish cohort (2,5% compared to 7-58%). The low frequency of CE in a large Danish RPL population suggests a high quality of prior pregnancy loss treatment.

P100 - Does coffee consumption impact on a successful fertility treatment?

Reproduction

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Introduction/Purpose: Infertility is a major public health concern. However, we still do not know the potential effect of modifiable lifestyle factors such as coffee consumption on chances of a successful fertility treatment.

The main objective was to investigate whether daily coffee consumption is associated with live birth rate among Danish women in a Medically Assisted Reproduction cohort.

Methods: A cohort study including 1,700 Danish women and partners enrolled at the start of treatment at the Fertility Clinic, Aarhus University Hospital, 2010-2015. Information on exposure to daily coffee consumption was obtained from self-administered questionnaires before start of treatment. Information on live birth rate was obtained by linkage to Danish nationwide registries.

Results: In preliminary results, we observed that women reporting a daily coffee consumption of 1-5 cups had higher odds of achieving a live birth during the first insemination (IUI) treatment cycle compared to a reference group of coffee abstainers (odds ratio (OR): 2.19 (95% confidence interval (CI): 1.16; 4.12)). Among women receiving their first in vitro fertilization (IVF) or intracytoplasmic sperm injection (ICSI) treatment, no association was observed (OR: 1.09 (95% CI: 0.84; 1.41)). Further results will be presented at the conference.

Conclusions: Daily coffee consumption was associated with higher odds of achieving a live birth among women receiving IUI, but no association was found with success of IVF or ICSI treatment. The results indicate that women need not to be warned against moderate coffee intake during IUI- treatment.

P101 - Gestational variation in the maternal serum cytokine profile during first half of pregnancy

Reproduction

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Introduction/Purpose: The normal pregnancy is a natural state of low-grade inflammation, represented by elevated CRP, oxidative stress markers and serum cytokines. The systemic serum cytokine concentration is a fingerprint of immune system activations, and a sensitive method for describing inflammatory status. Several pregnancy complications have been associated with an increase in inflammatory cytokines, representing a dysfunctional maternal systemic immune response. Our aim is to characterize the maternal serum cytokine profile during the first half of normal pregnancy. Characterizing normal pregnancy can facilitate the understanding, prediction and prevention of pregnancy complications.

Methods: Our study cohort consists of 119 healthy women carrying a singleton fetus (the Normalflow Study). Maternal sera from gestational week 10, 12, 18 and 24 were analyzed for 27 different pro-inflammatory cytokines with multiplex technology. Univariate and multivariate statistical analysis (principal component analysis and partial least squares discriminant analysis) will be performed to characterize changes in cytokine profiles during normal pregnancy, and to reveal how cytokines interact at different time points during pregnancy.

Results: Mean maternal age was 28.5 years (range 18-37) and mean body mass index was 24.1 kg/m² (range 17.7-39.8). Mean gestational age at inclusion was 75 days and 51% of women were nulliparous. Detailed cytokine profiles describing the gestational variations on individual and group level are being analyzed.

Conclusions: Serum cytokine profiling is a sensitive measure of maternal status, and the gestational effect on serum cytokine levels in normal pregnancies will be presented.

P102 - Impact of uterine fibroids on fertility

Reproduction

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Introduction/Purpose: Introduction: Uterine fibroids are the most common benign tumors in the uterus. They occur in up to 10 % of women aged 20-30 and about 40 % of women aged 40-50 years.

Fibroids are believed to reduce fertility and removal is often recommended to improve fertility. However, there is no clear evidence for this recommendation.

Treatments have been shown effective on symptoms such as bleeding and pain, but it is unclear whether they improve fertility.

Purpose: The purpose of this study is to investigate fertility among premenopausal women with uterine fibroids. In addition, we will investigate whether surgical removal of uterine fibroids improves fertility.

Methods: Method: Historical cohort study based on data from The Danish National Birth Cohort and the Danish National Patient Registry. The Danish National Birth Cohort is a large cohort of 101,042 pregnancies obtained

between 1996 and 2002. The Danish National Patient Registry contains diagnoses and treatment provided in The Danish Health Care system. We are preparing a comparison of 3 groups of women; A. Women

without uterine fibroids. B. Women with uterine fibroids prior to pregnancy and no surgical treatment. C. Women who have had surgical treatment of uterine fibroids prior to pregnancy. The primary outcome is

time to pregnancy.

Results: Results: We expect the results to be ready in May.

Conclusions: Conclusion: The results of this large register based study can contribute to more accurate recommendations for treatment of uterine fibroids in relation to fertility.

P103 - No effect of endometrial scratching before second IVF

Reproduction

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Introduction/Purpose: Several studies have shown that diagnostic hysteroscopy and endometrial scratching improves the clinical pregnancy rates (CPR) in patients treated with IVF more than two times.

Methods: In a clinical randomized study, 229 patients were randomized to either office hysteroscopy (OH) (group 1) with biopsies or control (group 2). We excluded patients with uterus pathology confirmed before and during OH (septum, polyp, etc.). Both groups underwent standard fertility treatment in the next cycle. The primary outcome was positive S-hCG at gestational age 4+2 and the secondary outcome was ultrasound confirmation of live intrauterine pregnancy.

Results: Group 1 included 112 patients and group 2 105 patients, no significant differences were found groups regarding age, height, weight, BMI, smoking or alcohol habits, neither regarding earlier fertility or pregnancies. Also, we saw no differences regarding ART; long or short protocol, IVF or ICSI, type of FSH, number of aspirated oocytes or number of transferred embryos. We found positive S-hCG in 28/112 in group 1, and 20/105 in group 2 (P=0,53) and confirmed intrauterine pregnancy with transvaginal ultrasound in 23/26 in group 1 and 17/18 in group 2 (P=0,63). None of the biopsies showed any pathology, but confirmed either proliferative or secretory phase, no differences between the groups.

Conclusions: In our clinical randomized controlled study examining effect of scratching in a normal endometrium, confirmed visually and histologically, we did not see any effect of the procedure. Our material was women waiting for their second IVF/ISCI treatment, suspected to have slight implantation failure.

P104 - Ovulation Induction with Clomiphene Citrate and its Outcomes

Reproduction

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Introduction/Purpose: Ovulatory problems account for 85% of the 1/7 British couples facing difficulties conceiving. Causes for subfertility in women of reproductive age vary, and the NHS has strict criteria for IVF referrals. As such, clomiphene citrate is a NICE-recommended selective-oestrogen-receptor-modulator, inducing ovulation. Doses are reviewed on a monthly basis, with follicular-tracking ultrasound-scans.

Methods: This retrospective analysis included patients attending fertility clinic at a district general hospital in England from January 2016 to March 2017. Analysis of data included patient referral letters, clinic notes, scans and discharge/referral-summaries, relating clomiphene treatment to fertility outcomes, in anovulatory patients.

Results: 144 patients were prescribed clomiphene citrate. 55% (n=80) had primary infertility; 59% were aged 31-40 when referred to clinic; 46% trying to conceive for over two years. The cause of infertility was recorded, and tubal patency conducted in 98% of cases.

60-95% of women ovulated with clomiphene and follicular tracking-scans, with 5% failing to ovulate and 20% failing to conceive despite ovulation, and others being referred for IVF. 41% achieved a pregnancy, of which, 47% had a BMI greater than 25. 65% required the lowest dose of 50mg, 33% 100mg. 65% were infertility for 1-2 years.

Conclusions: When taken as recommended, most women starting clomiphene were shown to ovulate effectively, with dropouts taken into account. Those starting clomiphene sooner had higher conception rates, with even the lowest dose showing the best; offering significant financial implications on health services, and recommendations that even a low dose of clomiphene should be started early in cases of infertility exceeding one year.

P105 - Proportion of thyroid disorders among women referred for fertility treatment.

Reproduction

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Introduction/Purpose: Thyroid hormones (TH) are vital for achieving and maintaining pregnancy, as demand for TH increases markedly during pregnancy. In women with subclinical hypothyroidism (SCH) or anti-thyroperoxidase-antibodies (TPOab) this demand may not be met, and these conditions are associated with increased risk of miscarriage. International guidelines recommend monitoring of thyroid function in case of TPOab and levothyroxine supplementation before fertility treatment in SCH. We aimed to study the prevalence of TPOab and SCH in women referred for fertility treatment, and to quantify the need of thyroid monitoring or levothyroxine (LT4) treatment

Methods: Women with first referral for fertility treatment (ART) at Aarhus University Hospital, Denmark, January 1st 2012 until March 31th 2014 were included. Exclusion criteria were comorbidity other than thyroid disease, and lack of TSH measurement. TSH and anti-thyroperoxidase-antibodies (TPOab) were measured as part of infertility work-up. Information on LT4 treatment was obtained by review of medical records.

Results: 1038 women were included. Thirty (2.9%) had known diagnosis of hypothyroidism. Twenty six (2.5%) were diagnosed with SCH during work-up and 19 of these (73.1%) initiated LT4 treatment. TPOab were available in a subcohort of 428 and positive in 62 (14.5%) of which 11 (17.7%) needed LT4 treatment prior to ART and another 21 (33.9%) during ART. Three women (0.25%) had low TSH.

Conclusions: Thyroid disorders are common among women referred for ART. Optimizing or initiation of LT4 treatment prior to ART is needed in 5.4 % of women. A proportion of 14.5% were TPOab positive requiring thyroid monitoring.

P106 - Risk of miscarriage in women conceiving after medically assisted reproduction (MAR) with an ultrasound verified live pregnancy at gestational week 7

Reproduction

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Introduction/Purpose: To estimate the proportion of miscarriage (pregnancy loss < 22 weeks) among MAR-treated women after an ultrasound (UL) verification of a live pregnancy at 7 weeks of gestation and until the routine 12-weeks' scan stratified by fertility treatment type. Secondly, to assess miscarriage after the 12 weeks' scan compared with controls.

Methods: We included 10,011 MAR-pregnant women with a singleton pregnancy verified by UL at week 7 identified in the Danish ART-Registry (*MAR Cohort*). Controls were 146,932 spontaneously conceived pregnancies (SCP) identified at the 12 week scan from the Danish Fetal Medicine Database. We estimated the overall proportion of miscarriage in the MAR Cohort as well as between week 7 and 12. The association between risk of miscarriage and fertility treatment type was adjusted for maternal characteristics by logistic regression analyses.

Results: The overall proportion of miscarriage after a live pregnancy verified at the 7 weeks scan was 10.9 %. The percentage was higher in the frozen embryo transfer (FET) group compared with insemination (IUI) (adjusted OR 1.31 [1.02-1.68]).

The proportion of miscarriages before week 12 was 10.3 %. Women treated with IUI had the lowest proportion of miscarriages (9.9 %), while it was 13.8 % in the FET group, adjusted OR 1.38 [1.09-1.74]. None of the MAR methods were associated with a higher miscarriage risk after week 12 compared with SCP.

Conclusions: We found that 10.9 % of MAR pregnancies ended in miscarriage. Most losses occurred before the 12 weeks scan. The miscarriage risk was found to be slightly higher among women treated with FET compared to IUI.

P107 - Size matters – Placement of differently sized levonorgestrel intrauterine systems

Reproduction

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Introduction/Purpose: Healthcare professionals (HCPs) and women sometimes raise concerns about difficulty and pain during IUS placements. Today differently dosed levonorgestrel intrauterine systems (LNG-IUS) with different sized inserters are available which releases 8ug/d, 12ug/d and 20ug/d. The insertion tube diameter of the LNG-IUS 8/12 is 3.8mm and the LNG-IUS 20 is 4.4mm or 4.8mm*.

To analyse ease and pain during placement of LNG-IUS with insertion tubes of 3.8mm versus 4.4/4.8mm.

Methods: A pooled analysis using data from one phase II study and from register data of failed LNG-IUS placements including both nulliparous and parous women.

Results: More HCPs stated LNG-IUS 12 placement as *easy* (94%) compared with placement of LNG-IUS 20 (86%).

A lower replacement rate (1.5%) was reported for LNG-IUS 8/12 compared to LNG-IUS 20 (3.0%) during 2014-2017.

When the different IUS were compared with each other, more women experienced *none or mild pain* during placement with LNG-IUS 12 (72%) compared to the LNG-IUS 20 (58%).

Conclusions: A smaller inserter diameter (LNG-IUS 8/12) was associated with a higher rate of *easy* placements with less failures and *none or mild pain* compared with placement of an IUS with a larger inserter diameter (LNG-IUS 20).

Clinical Implications

Awareness of reduced pain and technical problems with a smaller inserter could help in removing barriers to intrauterine contraception meeting the global recommendation on increasing access to LARC methods.

P108 - Testicular damages after testicular sperm retrieval evaluated histologically in a ram model

Reproduction

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Introduction/Purpose: Since the early nineties a large and increasing number of infertile couples have been treated with sperm retrieved from the testis or epididymis. Traditional open biopsy, fine needle and TruCut biopsy seem very equal according to chance to obtain testicular sperm. We have found it relevant to evaluate these sperm retrieval techniques according to testicular damage, e.g. formation of scar tissue, in a sheep model, since ruminants have testicles permanently located in a scrotum outside the body.

Methods: Each testicle of Shropshire rams, 6-8 months of age, was exposed to a given surgical procedure or left unoperated as a control. In total 9 rams were included, 3 testicles underwent traditional open testicular biopsy, 2 multiple needle biopsies (19G), and 9 TruCut biopsies (14G), while the remaining 4 testicles served as controls. Among the men undergoing TruCut biopsy, the needle was inserted near the *Rete testis* in 4 cases and in the testicular periphery (distant from the *Rete testis*) in 3 cases. The same procedure was never performed on both sides (of a given ram). MicroTESE was not evaluated in this study.

Results: Most testicles exposed to sperm retrieval procedures showed areas with calcifications and fibrosis surrounded by areas with dilated seminiferous tubules. Such histological changes were not found in the control testicles. The abnormalities could not be associated to the sperm retrieval procedure being used.

Conclusions: Any conventional simple sperm retrieval procedure may cause damage to the testicles. Therefore, the numbers of procedures should be limited by cryopreservation of excess retrieved testicular sperm.

P109 - Violence during pregnancy and maternal health, birth-outcomes in Vietnam

Reproduction

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Introduction/Purpose: Intimate partner violence (IPV) against women is a global public health problem. The purposes of this study were to describe the prevalence of IPV during pregnancy and to measure the association between IPV during pregnancy and risk of maternal health, adverse birth outcomes

Methods: A prospective cohort study where data were among 1276 pregnant women in Dong Anh district, Vietnam from March, 2014 to July, 2015. Women were recruited and followed-up three times during pregnancy. Information of interest included exposure to IPV during pregnancy, socio-economic characteristics, physical and mental health problems and adverse birth outcomes

Results: The prevalence of IPV during pregnancy was 35.4% (Emotional violence: 32.2%; physical violence: 3.5% and sexual violence: 9.9%). After adjustment for age, education, occupation, economic status, women who were exposed to IPV during pregnancy were 1.8 times more likely to have problems with physical health (AOR=1.8; 95%CI: 1.4-2.3) and were 2.9 times more likely to have mental health problems (AOR=2.9; 95%CI: 2.2-3.6) as compared with those who were not exposed. In addition, women who were exposed to physical violence during pregnancy were five times increased OR of preterm birth (AOR=5.5; 95%CI: 2.1-14.1) and were nearly six times increased OR of low birth weight (AOR=5.7; 95%CI: 2.2-14.9) as compared to those who were not exposed

Conclusions: The reproductive health care program should focus on screening for IPV during pregnancy in order to give consultation and strengthen health care to improve maternal health and pregnancy outcomes

P110 - What do fifteen-year-old pupils know about contraception?

Reproduction

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Introduction/Purpose: Little is published regarding what pre-high school adolescents know about contraceptives. The study aim was to investigate contraceptive knowledge in a population of fifteen-year-old pupils. We explored whether their sociodemographic characteristics, sexual experience, and knowledge of sexual health influenced their contraceptive knowledge.

Methods: We performed a population-based cross-sectional study in ten junior high schools in the Trondheim area in 2015. Data was collected using a web-based questionnaire. We compared pupils who had above and below mean level of contraceptive knowledge by logistic regression analysis.

Results: Eight hundred and fifty pupils participated. Fifteen percent of the pupils reported prior sexual intercourse. Among contraceptive users, 75% had used condoms, while 8% of the girls used hormonal contraception. The percentages of the pupils answering correct regarding questions on condoms, contraceptive pills, long-acting reversible contraceptive (LARC), and sexual health were 63, 43, 27 and 56, respectively. Variables associated with above mean contraceptive knowledge were female sex (adjusted odds ratio (AOR) 4.3, 95% confidence interval (CI) 3.2 – 5.8); high parental education (AOR 2.0, 95% CI 1.4 – 2.9); Norwegian ethnicity (AOR 2.7, 95% CI 1.4 – 5.3); reporting having had sexual intercourse (AOR 2.1, 95% CI 1.3 – 3.2); and reporting having ever used contraceptives (AOR 2.0, 95% CI 1.3 – 2.9). Those answering correctly regarding sexual health questions also knew more about contraceptives (AOR 2.5, 95% CI 1.7 – 3.6).

Conclusions: We found that fifteen-year-old pupils from a Norwegian population knew rather little about contraceptives, especially about LARC. Sexual and contraceptive education should start earlier advancing future sexual health.

General Gynaecology

P111 - 3-dimensional versus conventional laparoscopy for hysterectomy: a randomized clinical trial

General Gynaecology

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Introduction/Purpose: The purpose of this study is to assess the beneficial and harmful effects of 3-dimensional laparoscopy compared to conventional laparoscopy for benign hysterectomy.

A recent observational study showed that operative time for hysterectomy was significantly lower for 3-dimensional compared to conventional laparoscopy. Complication rates were similar for the two groups. No other observational studies or randomised clinical trials have compared 3-dimensional to conventional laparoscopy in patients undergoing total hysterectomy for benign disease.

Methods: The design is a randomised multicentre clinical trial. We planed to include 400 women referred for laparoscopic hysterectomy for benign indications, but because of inclusion difficulties, we had to terminate the study with only 100 women included. Patients were randomized to 3-dimensional or conventional laparoscopic hysterectomy. Operative procedures followed the same principles and the same standard whether the surgeon's vision is 3-dimensional or conventional laparoscopy. Primary outcomes is the impact of surgery on quality of life, assessed by the SF 36 questionnaire and postoperative pain. Secondly, we have investigated operative time, time to return to work, length of hospital stay, and per- and postoperative complications.

Results: I am currently working with a statistician on the figures. Data will be analysed and ready for the NFOG congress in June.

Conclusions: This trial is the first randomized clinical trial investigating the potential clinical benefits and harms of 3-dimensional compared to conventional laparoscopy. The results may provide more evidence regarding the future place of 3-dimensional laparoscopy in the range of endoscopic approaches for benign hysterectomy.

P112 - Chronic vulvar pain among gynecological outpatients

General Gynaecology

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Introduction/Purpose: Chronic vulvar pain (CVP) is an umbrella term for all vulvar pain conditions exceeding 3 months of duration. To our knowledge, no studies on prevalence rates have been published from Norway nor elsewhere in Scandinavia. The aim of the study was to examine the prevalence rates of CVP in a general gynaecological population. Secondary aims were to map different sociodemographic factors as well as sexual problems associated with CVP.

Methods: A descriptive cross-sectional study was conducted among patients referred to gynaecological outpatient clinics at St.Olavs hospital, Trondheim University hospital, Norway. The study was anonymous, using a self-reporting questionnaire. The pain types included in our definition of CVP were the following: stinging pain, sharp/stabbing pain or strong pain elicited by touch.

Results: Of a total of 356 women, 57 (16%) reported CVP within the previous year. Ever having an involuntary sexual experience was associated with a threefold risk of reporting CVP (age-adjusted OR: 2.93 [1.5, 5.9], $p=0.003$). Frequently reported reasons for dissatisfaction with sexual function among women with CVP were pain during penetration (75%), lack of sexual interest (40%) and deep dyspareunia (40%). More frequently reported by women with CVP was fibromyalgia/widespread pain ($p=0.037$), diarrhea ($p=0.041$) and constipation ($p=0.002$) when comparing to controls.

Conclusions: Increasing the general knowledge on vulvar pain is essential, but more detailed research elicited on larger study populations is needed. Having identified factors frequently associated with CVP could help clinicians to treat these women in a more optimal way and if needed, referring them to vulva clinics with specific expertise.

P113 - CO₂ laser for vaginal atrophy: Efficacy and side effects

General Gynaecology

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Introduction/Purpose: The aim of the study was to assess the efficacy and safety of fractional carbon dioxide (CO₂) vaginal laser in Danish postmenopausal women (PMW) with symptomatic vulvovaginal atrophy (VVA).

Methods: A 9-12 months longitudinal study of PMW with symptomatic VVA treated by 3 series of pulsed fractional CO₂ vaginal laser 4 weeks apart. The effect was evaluated objectively (vaginal pH, degree of atrophy) and by questionnaires (symptom bother-score and female sexual function index score (FSFI)) with symptoms scored 0-10 on a visual analog scale (VAS). Undesired effects in relation to treatment were also evaluated by questionnaires.

Results: 18 PMW met the eligibility criteria (at least one VVA-symptom rated ≥ 6 , vaginal pH ≥ 5 , never breast cancer).

Satisfaction with sexlife increased and most VVA-symptoms declined after three treatments and remained reduced at the end of study (sexlife satisfaction 5 vs. 7, vaginal dryness 7 vs. 3, pain 6 vs. 1, pruritus 3 vs. 1, dyspareunia 7 vs. 3).

The vaginal pH decreased (from 7 to 5) after three months and remained lowered at study end (pH 6). The objective degree of vaginal atrophy declined after the 3 treatments, but was at end of study not significantly different from that at enrolment.

The average VAS-score for discomfort and pain in relation to treatment were equal to or less than 1. Vaginal spotting was reported in 20 of 54 treatments and in 4 paracetamol was needed.

Conclusions: Fractional CO₂ laser seems to be an effective and safe treatment for VVA.

P114 - Complex non atypical hyperplasia and the subsequent risk of carcinoma, atypia and hysterectomy during the following 9-14 years.

General Gynaecology

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Introduction/Purpose: The aim of this study was to evaluate the long-term risk of developing atypical hyperplasia/endometrial cancer or having a hysterectomy after being diagnosed with complex non-atypical hyperplasia (CH).

Methods: A historic cohort study of 114 women diagnosed with CH between January 1st 2000 and December 31st 2005. All patient records and pathologic reports were reviewed with complete follow up on all patients in the national pathologic database until September 1st 2014. Kaplan-Meier analysis was used to determine (1) no hysterectomy and (2) no diagnosis of endometrial cancer or atypia after the CH diagnosis.

Results: Fifteen percent (n = 17) were diagnosed with endometrial cancer and 7% (n = 8) with atypia, most during the first year (10 cancer, 7 atypia). 9% (8/85) of the remaining women at risk developed cancer or atypia in the follow-up period after one year. By Kaplan-Meier the five-year risk for cancer or atypia was 20% (CI; 14-21). The risk of having undergone hysterectomy within five years was 30% (CI; 22-39).

Conclusions: The long-term risk of being diagnosed with atypia or cancer after a CH diagnose is not insignificant, when disregarding patients having undergone hysterectomy. More than half the women with atypia or cancer are diagnosed or operated during the first year. This could indicate the presence of concomitant but unidentified cancer or atypia at the time of initial sampling. This study reinforces the importance of follow up or treatment of women with CH - especially, but not only during the first year.

P115 - Effects of a structured basic course on learning colposcopy

General Gynaecology

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Introduction/Purpose: In Europe, colposcopy training is acquired after specialization or during the specialization program. This study aims to evaluate the effect of a structured basic course on learning of colposcopy-related skills and confidence, among colposcopists with different experience.

Methods: Three similar courses were arranged in 2015 by the European Federation for Colposcopy, in Finland, Norway and the United Kingdom. During the course (6 hours of lectures including many colposcopy cases) the participants were activated by randomly choosing a participant to analyse a case. All participants were invited to take part in the study, with tests that included ten colposcopic images, ten patient cases and visual analogue scales (VAS) for marking confidence in the answers. The main outcome measures, i.e. mean scores in each category (case management, correct diagnosis, identification of transformation-zone, high-grade lesions, abnormal findings and invasion), confidence and the correlation between these were compared before, immediately after and 2 months after the course, for all participants and stratified according to experience.

Results: Altogether 213 colposcopists participated in the study. Mean test scores and confidence were higher after the course for all participants, the highest increase among beginners. A positive correlation between correct answers and confidence after the course and follow-up could be seen only among the experts. A part of the participants had high confidence but low scores, especially in the pre-test.

Conclusions: A structured course with a high level of participant activation can improve colposcopy-related skills and confidence especially for inexperienced colposcopists. Senior consultants should be aware of the risk of overconfidence.

P116 - Enterobius Vermicularis in a 14-year-old non-sexually active female

General Gynaecology

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Introduction/Purpose: A 14-year-old Caucasian girl presented to her General Practitioner in England with two days of stabbing suprapubic pain; nausea; vomiting; and dysuria. Her bowels were normal. A UTI was diagnosed and antibiotics (trimethoprim) prescribed. She attended the Emergency Department (ED) at a District General Hospital to rule out appendicitis.

She was admitted to paediatric surgeons. Her pulse rate was 95bpm; respiratory rate: 20; blood pressure: 133/74; blood results showed CRP: 126; WCC: 9.1; Amylase: 43. She received paracetamol and ibuprofen.

Methods: An ultrasound-scan showed a 4.3cm irregularly outlined thick-walled cyst with heterogeneously-echoed interior in the left uterine-adnexal region, suggestive of ovarian-cyst torsion.

She had a laparoscopic adhesiolysis which found a leaking haemorrhagic left ovarian-cyst; a congested appendix was removed. Other adhesions included an inflamed left fallopian tube and omentum. These were separated; peritoneal fluid came back negative from microbiology. Histology of the appendix was in keeping with a diagnosis of Enterobius Vermicularis infection, with submucosal reactive lymphoid hyperplasia.

Results: This is an intestinal (pinworm/threadworm) parasite, which commonly presents with perineal/perianal pruritus. Despite low morbidity, direct contact, or fomite transfer causes higher morbidity in females who go on to develop ectopic infections (Russel 1991).

Our patient was given a prescription for anthelmintic treatment and seen one month later. Other than constipation, she recovered well from the laparoscopy, and was discharged.

Conclusions: Re-infection is common; repeated therapy dose is suggested. E. Vermicularis infection is commonly missed or mistaken for other diagnoses so should be considered in a young non-sexually active female presenting with suprapubic pain.

P117 - Gynecological alarm symptoms: Lifestyle, socioeconomic status and contact to GP/gynecologist

General Gynaecology

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Introduction/Purpose: To investigate whether contact to the general practitioner (GP) or specialist care was associated with lifestyle factors or socioeconomic status (SES) among women with recent onset gynecological cancer alarm symptoms (pelvic pain, postmenopausal bleeding, bleeding during intercourse or pain during intercourse).

Methods: Nationwide prospective cohort study in Denmark, based on a random sample of 51 090 adult women from the general population. A web-based questionnaire regarding gynecological alarm symptoms, GP contacts and lifestyle was distributed to the invited individuals. Data about contact with specialist care and SES were obtained from national registries.

Results: The study included 25 866 non-pregnant women; 2957 reported the onset of at least one gynecological cancer alarm symptom. The proportion of women reporting GP contact ranged from 21.1% (pain during intercourse) to 32.6% (postmenopausal bleeding). Higher age and immigrant status was significantly associated with GP contact with at least one of the four symptoms.

For postmenopausal bleeding and/or bleeding during intercourse, higher age and a high educational level was significantly associated with GP contact.

The proportion of individuals having contact with specialist care ranged from 39.3% (pain during intercourse) to 47.8% (bleeding during intercourse). A high educational level was significantly associated with contact to specialist care.

Conclusions: Socioeconomic factors influence both contact with GP and subsequent specialist care among patients with gynecological cancer alarm symptoms. Future studies should investigate these inequalities and their possible consequences.

P118 - Hysteroscopic Mechanical Tissue Removal for treatment of intrauterine pathology in outpatient setting: An observational study

General Gynaecology

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Introduction/Purpose: Hysteroscopy is frequently used in the evaluation of uterine pathology in women with abnormal uterine bleeding (AUB). Endometrial polyps are one of the most common intrauterine pathologies associated with approximately 10-40% of AUB. In addition, retained products of conception (RPOC) occurs in 5% of women following first trimester abortion. Until recently, hysteroscopy was performed in the operating theatre under general anesthesia. Consequently, our aim was to evaluate the use of hysteroscopic mechanical tissue removal system treating intrauterine pathology in an outpatient setting.

Methods: An observational study in patients undergoing hysteroscopy with TruClearTM 5C due to AUB in an outpatient setting between May 2017 and January 2018 at Viborg Regional Hospital. Primary aim was the rate of successful procedures and secondary aims included women's pain perception, cervix dilatation, operating time, histopathological findings, and complications rate.

Results: A total of 139 women (75 premenopausal (54%) and 64 postmenopausal (46%)) were included in the study. All patients were administered mild oral analgesics (NSAID and Paracetamol) 2 hours prior to the procedure. Local anesthesia and cervix dilatation was necessary in 35 patients (25%). Only one patient was converted to general anesthesia due to intolerable pain.

The VAS score was registered in 126 patients (91%), median VAS score was 3 (IQR 2-5) during hysteroscopy. The median operating time was 10 minutes (IQR 4-45). 136 samples were sent to histopathological examination and only 1 sample (0.73%) was inconclusive.

Conclusions: Hysteroscopic tissue removal system can be performed in an outpatient setting and offers a fast, effective, and patient friendly treatment alternative.

P119 - Medical treatment of rectal endometriosis: symptoms and quality of life

General Gynaecology

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Introduction/Purpose: The aim of the study was to monitor quality of life and clinical symptoms in medically treated patients with rectal endometriosis. Moreover, size measurements of rectal endometriosis nodules performed with transvaginal ultrasonography were correlated to severity of symptoms.

Methods: Patients with rectal endometriosis were recruited from the outpatient endometriosis clinic at Aarhus University Hospital between September 2014 to February 2016. All participants were on medical treatment such as oral contraceptives, oral gestagens or a levonorgestrel intrauterine device, underwent transvaginal ultrasonography and answered questionnaire regarding clinical symptoms and quality of life (Short Form 36 and Endometriosis Health Profile 30) at baseline, and six and 12 months later.

Results: Ninety-eight participants were included and 80 (82 %) patients completed the follow up. Scores of quality of life (SF-36) was comparable to normotensive SF-36 data for Danish women in the age-group and did not change with time. All participants had a low score in the Endometriosis Health Profile 30 (indicating the best health status) and this did not change during follow up. No association between change in size of the rectosigmoid nodule and change in symptoms was seen.

Conclusions: Medical treatment of rectal endometriosis appears to be a viable treatment-approach, given that patients are followed clinically to detect cases in need for surgery. Change in size of the nodule was not related to a concurrent change in symptoms and quality of life.

P120 - Myocardial Infarction in Women with Polycystic Ovary Syndrome

General Gynaecology

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Introduction/Purpose: Women with polycystic ovary syndrome (PCOS) have several risk factors for cardiovascular disease. Combined hormonal contraception increases the risk of myocardial infarction (MI) moderately in young women. The aim of this study was to assess the risk of MI in women of reproductive age with PCOS and to explore how the use of hormonal contraception and adiposity influences the risk

Methods: In this national cohort study all Danish non-pregnant women 15-49 years old, without previous thrombotic disease or cancer, were followed from January 2001 through December 2012 in four national registries for a PCOS discharge diagnosis, use of hormonal contraception, and a first ever MI diagnosis. Risk estimates were calculated by Poisson regression and adjusted for age, calendar year, education, use of hormonal contraception, and body mass index (BMI).

Results: Within 11,332,675 observation years, 1,674 women were recorded with a first time MI. 90,038 women years and 15 infarctions were in women with PCOS. The risk of MI in all women increased 100 fold with increasing age and decreased to 25% with increasing education. Women with PCOS had an adjusted 1.6 (95% CI 1.4-1.8) times increased risk for MI.

In a sub-analysis on women with known BMI (n=301,514), the RR of MI in woman with PCOS was 2.5 (95%CI 0.8-7.8), when adjusted for BMI 2.0 (95%CI 0.6-6.4).

Conclusions: Women of fertile age with PCOS have a 60% increased risk of myocardial infarction compared to women without PCOS, which is not explained by more adiposity and more users of hormonal contraception in these women.

P121 - Nausea and vomiting of pregnancy: increased risk with affected relatives

General Gynaecology

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Introduction/Purpose: Studies have suggested genetic predisposition to nausea and vomiting of pregnancy (NVP). Our objective was to evaluate associations between the severity of patient's NVP symptoms and reported family history of NVP.

Methods: Cohort study with 2381 pregnant women, enrolled from 33 antenatal care centers in Turku city area during mid-pregnancy routine visits between October 2011 and November 2014. NVP was evaluated with modified Motherisk Pregnancy-Unique Quantification of Emesis (PUQE)-questionnaire according to the worst 12-hour period of current pregnancy. History of NVP in relatives was asked (yes/no/who) and categorized into first-degree (mother/sister) and second-degree relatives (more distant).

Results: Altogether 88 % of 2381 women (mean aged 30.3, range 15.2–45.9) suffered from NVP. Mean gestational week at the response was 20.2 (range 7–40). Of all women, 29.4 % (n=700) had mild, 52.2 % (n=1243) had moderate and 6.4 % (n=152) had severe NVP. Of all women, 39.2 % (n=934) answered having affected relatives. Of them, 36.7 % (n=874) had affected first-degree and 2.5 % (n=60) had affected second-degree relatives. Women with affected relatives had increased risk for more severe NVP (OR 3.2, 95%CI 2.01–5.05, $p < 0.0001$). Women with affected first-degree relatives had an increased risk for more severe NVP (OR 3.1, 95% CI 2.04–4.74, $p < 0.0001$). Family history of NVP in second-degree relatives was associated only with risk of severe NVP (OR 4.2, 95% CI 1.29–13.59, $p < 0.0001$).

Conclusions: History of NVP in first-degree relatives increases the risk of having NVP. More research is needed about the mechanisms behind.

P123 - Open Surgical Experience amongst Gynaecologists in the Scandinavian Countries

General Gynaecology

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Introduction/Purpose: Traditionally gynaecologists have been trained in open surgical procedures in the operating room using the apprenticeship model. However, the number of open surgical procedures has been reduced with the wide spread use of minimally invasive surgery. Training in the operation room may be insufficient for trainees to gain the operative experience needed to perform open surgical procedures safely. Simulation training could provide a solution to this problem; however, first we need to explore how experienced gynaecologists are in open surgery.

Methods: An online survey exploring the level of experience, annual operative volume, and total number of procedures in open surgery was sent out to doctors working in departments of obstetrics and gynaecology at 138 hospitals in Denmark, Norway and Sweden.

Results: Out of the participants invited to answer the survey 307 gynaecologist answered. Amongst 213 specialists the mean annual operative volume was 32 open surgical procedures per year with a total of 678 procedures in their career. Amongst 91 gynaecological trainees the mean annual operative volume was 24 open procedures per year and an average of 70 procedures in their career.

Conclusions: There seems to be a low operative volume amongst trainees in gynaecology where trainees only perform 24 open surgical procedures in a year. The lack of open operative experience amongst gynaecologist brings to attention the need for other training methods such as simulation-based training that can assure that gynaecological trainees reach the level of proficiency in open surgical technique that is required to perform open surgical procedures safely.

P124 - Oral contraceptives for the treatment of primary dysmenorrhea. An updated Cochrane review

General Gynaecology

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Introduction/Purpose: Combined oral contraceptives are often used as a treatment for primary dysmenorrhea (painful menstrual cramps) but the supporting evidence is weak. With more focus on harms from contraceptives reliable estimates of its effects are required in order to determine if the benefit outweigh the harms.

Methods: We conducted an update of a 2012 Cochrane review and we adhered to Cochrane methodology by searching standard databases as well as ClinicalTrials.gov.

Randomized controlled trials comparing oral contraceptives to either placebo, to NSAIDs or to another oral contraceptive were included. Two independent researchers did all screening and data extraction. Meta-analyses were performed in ReviewManager 5.3.

Our primary outcome was improvement in pain either on a continuous scale or as dichotomous data. Continuous data on different scales would be pooled using the standardized mean difference. For dichotomous data a number needed to treat would be calculated. Adverse events, absence from work, and women requiring pain medication were secondary outcomes.

Results: We screened an additional 800 studies and we included 21. Several were only published on ClinicalTrials.gov. The final result of the meta-analysis is expected in April 2018.

Conclusions: Conclusion expected in April 2018

P125 - Ovarian lesion developing during and disappearing after 12-week ulipristalacetate treatment.

General Gynaecology

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Introduction/Purpose: Case report:

A 30-year-old gravida-0 with menstruations of 5/28 days, and no former medical disorder, was diagnosed with a solitary submucous myoma 6.7 cms in diameter after two episodes of heavy vaginal bleeding, with Hb 97 and low abdominal pain. Treated initially with medroxyprogesterone 20 mgs/day and tranexamic acid, she was put on ulipristalacetate 5 mgs/day perorally for 12 weeks to cause amenorrhea and shrinkage of the submucous myoma. Three weeks later she came for an acute consultation due to abdominal pain and heavy beige-coloured discharge. The myoma looked "Pagman-shaped" on ultrasound with central necrosis and a ruptured surface. Both ovaries had normal appearance. At follow up after 12 weeks treatment the myoma had shrunk to a diameter of 2 cms with a degenerated appearance. Ultrasonography showed a hyperechogenic, small-cystic endometrium, 29 mms thick. The right ovary had normal appearance. The left ovary showed a round 34 x 30 x 31 mm small-cystic/solid lesion with adenomatous appearance comprising 2/3s of the ovarian volume with a lateral edging of normal ovarian parenkyma. The ultrasound-morphology of the lesion resembled a granulosa-cell tumour, but lacked the typically intense vasculature. A possible metastasis from breast or GI-tract could not be ruled out. Tumour markers were checked, and to expel the hypertrophic endometrium, noretisterone 10 mgs for 7 days was given. Eleven days later the endometrium was expelled and the ovarian lesion completely gone, leaving only a vague hardly visible 10 x 9 x 14 mm trace in the ovarian parenchyma. Follow-up has been uneventful.

Methods: .

Results: .

Conclusions: .

P126 - Predicting low compliance to follow-up and IUD insertions after first trimester medical termination of pregnancy

General Gynaecology

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Introduction/Purpose: Non-attendance at contraceptive visits after termination of pregnancy (TOP) is common. Long-acting reversible contraception (LARC) methods and their early initiation have been proven effective in preventing repeat TOP. Recognizing risk factors for non-attendance is important when improving contraceptive services after TOP.

Methods: This is a secondary analysis of a randomized controlled trial assessing early intrauterine contraception after first trimester TOP. Altogether 748 women were randomized. Women in the intervention group received an IUD at the hospital within surgical TOP or at a follow-up visit 1–4 weeks after medical TOP (MTOP). Women in the control group were advised to contact primary health care (PHC) for follow-up and IUD insertion, according to current national guidelines.

In the present study, we assessed attendance at follow-up visits and rates of IUD insertion during three months after MTOP.

Results: MTOP was chosen by 605 women, thus there were 306 women in the intervention and 299 in the control group. In the intervention group, 285 (93.1%) women attended follow-up, and 278 (90.8%) received an IUD. In the control group, 197 (65.9%) women had a follow-up at PHC, and 79 (26.4%) received an IUD during three months.

In both groups non-attendance was associated with history of pregnancy and TOP. In the intervention group, predictive factors for not having an IUD were anxiety, history of pregnancy and TOP, but no significant predictors were found in the control group.

Conclusions: Predictive factors for low compliance are few. Centralizing TOP and contraceptive care results in higher rates of attendance and IUD use.

P127 - Radiofrequency Ablation for Uterine Myomas: Long-term Clinical Outcomes and Reinterventions

General Gynaecology

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Introduction/Purpose: To assess the long-term efficacy and rate of reintervention after ultrasound-guided radiofrequency thermal

ablation (RFA) for uterine myomas.

Methods: 66 consecutive women underwent ultrasound-guided RFA and were contacted for a long-term followup

to complete the Uterine Fibroid Symptom and Quality of Life Score (UFS-QOL) questionnaire and optional ultrasound and

clinical examination.

Results: Sixty-six patients (mean age 45±7 years) with symptomatic myomas (median 122.5 cm³ [range, 24–675]) were included.

Forty of 62 patients underwent no/minor hysteroscopic reinterventions; 35 patients from

this group completed the UFS-QOL questionnaire and showed sustained and improved symptom severity scores. Twenty-two patients (35%) had major reinterventions (15 hysterectomies and 7 myomectomies). The estimated major reintervention rate because of myoma-related symptoms was 13.5% (95% confidence interval [CI], 7%–25%) after 2 years and 29.1%

(95% CI, 19%–43%) after 5 years. Women ≥45 years of age had a major reintervention rate of 12% (95% CI, 5%–26%) after

2 years and 19% (95% CI, 10%–35%) after 5 years, and women < 45 years had a major reintervention rate of 35.0% (95% CI,

19%–60%) and 73.8% (95% CI, 52%–92%) after 2 and 5 years, respectively. The Kaplan-Meier estimates for reintervention in women with only 1 RFA-treated myoma of 180 cm³ were 13% (95% CI, 6–28%) and 26% (95% CI, 14%–45%) after 2 and 5 years, respectively. No patients with morphologic myoma characteristics underwent reinterventions.

Conclusions: Ultrasound-guided RFA for uterine myomas is an alternative treatment option especially for women ≥45 years

of age with only 1 myoma (180 cm³) and warrants further evaluation.

P128 - Reducing the examination time and optimising a gynaecological examination with a new concept of a pelvic examination chair

General Gynaecology

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Introduction/Purpose: Many women have variable degrees of unpleasant expectancy on gynaecological examinations.

The purpose with the present investigation was to collect information from the gynecologists as well as the patients on the experience of gender neutral design of a pelvic examination chair with increased comfort.

Methods: A gender neutral pelvic examination chair was constructed without stirrups and with built-in heating in the soft upholstery. The new technical solution provided improved integrity for the patient with the perineum only exposed during the examination procedure.

The patients and the gynaecologists who performed the examination, answered questionnaires concerning experiences after the examinations in the traditional examination chair and in the new chair, respectively. In the questionnaires concerning the new chair, there were questions regarding the absence of stirrups during pelvic examinations. The duration of the examinations was measured with a stop-watch.

Results: The questionnaires comprised aspects such as comfort, heating and integrity. The majority of the answers were significantly in favour of the new concept without stirrups and with increased comfort. The average examination time was significantly shortened, the patients more relaxed and had an increased feeling of integrity, in the new pelvic examination chair.

Conclusions: The gynaecological chair with stirrups, has basically had the same design for many years. The intrusive examination process can be compensated by improved comfort and increased respect for the patients' integrity. This study demonstrated that patient friendly adaptations of the pelvic examination chair, significantly shortened the pelvic examination time and significantly optimized the examination procedure in many aspects.

P129 - Safe in-bag laparoscopic morcelation of myomas and large uteri

General Gynaecology

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Introduction/Purpose: In the last decade there has been a shift from abdominal hysterectomy and myomectomy to laparoscopy. Large myomas, however, may be difficult to remove from the abdominal cavity without morcelation increasing the risk of dissemination of unsuspected malignant tumors. Therefore morcellation has been abandoned in many countries and a regression back to open surgery been observed. The PneumoLiner and PK-Morcelator system uses an in-bag bipolar morcelation and has been approved by FDA for safe morcelation.

The aim of the present study was to describe and evaluate learning curve of PneumoLiner PK-Morcelator system. Secondary, we looked at problems associated with smoke development during morcelation.

Methods: In total 15 patients had laparoscopic myomectomy or hysterectomy performed using the system. Evaluated parameters included surgical procedure time, amount of bleeding and surgical complications. In addition, the procedures were video recorded for thorough evaluation of the technique.

Results: No procedure related adverse events were observed. The difficulties experienced during the procedure were mainly related to the development of smoke inside the bag causing difficult view of the morcelation procedure and health concerns among the staff, as smoke escaped from the system to the operating theatre. A video will be presented demonstrating each step in the procedure and difficulties.

Conclusions: We found that the technique was easy to learn by experienced surgeons. The smoke problem can be solved by attaching a smoke evacuating system to the PK-morcelator. Further and larger studies are, however, needed to evaluate the surgical outcome.

P130 - Surgical treatment of endometriosis; a 5-years hospital cohort

General Gynaecology

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Introduction/Purpose: Endometriosis causes pelvic pain and subfertility. Laparoscopy is the gold-standard diagnostics and surgical treatment increasingly aims for removing all visible lesions. This study characterizes patients with surgical verified endometriosis regarding preoperative symptoms, intraoperative disease-score and short-term outcome of surgery.

Methods: Retrospective hospital cohort study of women surgically diagnosed with endometriosis at Haukeland University Hospital during 2010-2014.

Results: Of 263 women operated for endometriosis 43 (16%) had multiple surgeries. Cyclic pain was dominant symptom in 124/263 women, chronic pelvic pain in 57, dyspareunia in 47, dyschezia in 15 and infertility for 12. Laparoscopy with peritoneal lesions removal was done in 76/263 women (28%), adnexal procedures in 122 (74%) and hysterectomy in 81 (30%).

Of 306 procedures, 9 (3%) were converted to laparotomy, for hysterectomies 6/81 (8%). Totally 122/306 surgeries (40 %) residual endometriosis was present postoperatively while after hysterectomy 65/81 women (80%) were radically operated. Revised American Society of Reproductive Medicine score (rASRM) for hysterectomy was median 29 (95% confidence interval (CI) 20-32), for adnexal surgery 26 (95% CI 23-30), and significantly lower; 5 with peritoneal excision procedure (95% CI 4-6, $p<0,001$).

Complications of different severity (intestinal/urinary tract lesions, haemorrhage, infection or rehospitalisation) occurred in 33/306 (11%) of all procedures but 23/81 (28%) of hysterectomies. Hysterectomy was an independent risk factor for complications, adjusted for rASRM score and radical surgery, OR 8.1 (95% CI 3.2-20.6, $p<0,001$).

Conclusions: Endometriosis surgery may usually be performed laparoscopically, but radical surgery including hysterectomy still entail a major risk for complications.

P131 - The First 200 patients in the Finnish sexual assault referral center – demographics and clinical findings

General Gynaecology

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Introduction/Purpose: To describe selected demographic factors and clinical findings from forensic medicine and clinical examination of the patients requesting support from the first Finnish sexual assault referral center (Seri Support Center) in Helsinki, Finland. Limited previous research exists on the Finnish sexual assault victims.

Methods: Retrospective cohort study of the first 200 patients of Seri Support Center Helsinki, Finland during June 1st, 2017 to January 28st, 2018. All patients were ≥ 16 years old and requested support during one month from the assault. Selected demographic factors, clinical findings and follow-up data were collected on standardized data collection procedure.

Results: The cohort consists of 195 (97.5%) women and 5 (2.5%) men. Median age was 24 (IQR 20-31) years. Number of 100 (50%) patients had a history of mental health problems and 65 (32.5%) had previous problems with alcohol or narcotics. Some injuries were detected in 91 (52.3%) cases out of 174 forensic medical examinations, genital injuries occurred only in 18/174 (10.3%) cases. Chlamydia trachomatis was detected in 19 (9.5%) cases at the first visit and in 2 (1%) cases at 2–4-week follow-up. No assault-originating pregnancy, HIV, syphilis, gonorrhea, hepatitis B or C has been diagnosed.

Conclusions: Sexual assault victims in Finland have often previous problems with mental health and narcotics. Physical injuries are mainly mild and sexually transmitted diseases rare, except Chlamydia trachomatis infections in the first examination. This study increases the knowledge from the Finnish sexual-assault-victim population and serves as a basis for further research.

P132 - The gynecological patient's attitudes towards the pelvic examination

General Gynaecology

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Introduction/Purpose: This study considers the gynecological patient's experience.

Methods: During a one year period (2014-2015), 5.935 women were admitted for the first time to Department of Gynaecology, Lillebaelt Hospital – Kolding. Among them 343 elective patients answered the questionnaire regarding their experience before and after the gynecological consultation.

Results: A substantial proportion of the gynecologic patients (27,1%) were unable to categorize their specific diagnosis for referral.

Among all age groups today's examination was reportedly less unpleasant than past pelvic examinations has been. The youngest age group had the most unpleasant experience (mean 3,6 of 10) and the eldest the least (1,9 of 10).

Among the >60 43,5% wanted the gynecologist to be female before today's examination, but this age group predominantly was examined by male gynecologists. After the examination the patients in this age group tended to change preferred sex from female gynecologists towards indifference between male and female gynecologists.

The study included questions regarding the sex of the gynecologist. Of all patients who preferred a female gynecologist and was examined by a female gynecologist, 93% still wanted a female gynecologist for future examinations. Patients who got a gynecologist opposite of the sex they preferred, were the most likely to change their minds. 76% of them changed preferences, most of them to no specific preference for the sex of a future gynecologist (89,5%).

Conclusions: Danish gynecological patients are generally comfortable with the pelvic examination.

Patients who preferred female gynecologists and were examined by male doctors are comfortable being examined by male doctors in the future.

P133 - The role of office hysteroscopy with the vaginoscopic approach in women with an intact hymen

General Gynaecology

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Introduction/Purpose: To evaluate the feasibility and applicability of office hysteroscopy in women with an intact hymen

Methods: Eight hundred and thirty-six patients with an intact hymen underwent diagnostic hysteroscopy due to different reasons in an outpatient setting

Results: Patients' mean age was 35 ± 10.6 years (range 3-69 years). Most patients (86.4%) with postmenopausal bleeding had intrauterine lesions, and they were especially at high risk (50%) for endometrial hyperplasia or malignancy. Five hundred thirty (63.3%) patients had histologic findings confirming concordance between hysteroscopic and histologic findings. Submucosal myoma had the highest concordance (96.3%), whereas endometrial hyperplasia had the lowest concordance (50%). Forty-eight patients (5.7%) had endometrial hyperplasia, and 35 patients (4.2%) had endometrial malignancy. Two patients who were thought to have non-specific endometrial thickening actually had endometrial pathology.

Conclusions: Hysteroscopy through vaginoscopic approach is feasible and well-tolerated in the patients with an intact hymen. Endometrial biopsy is recommended for the patients with risk factors of endometrial hyperplasia and malignancy.

P134 - Two incidents of decidual cast as a side effect of hormone therapy - a case report

General Gynaecology

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Introduction/Purpose: Decidua is the name of the special lining of the uterus during pregnancy. Decidual cast is a rare condition that describes the elimination of the endometrium as an entire piece, having the shape of the intrauterine cavity. The uterus can be decidualized by various reasons, the most described is due to progesterone treatment. Pathologic it is not possible to determinate if the decidual cast is formed because of progesterone from an ectopic pregnancy. Differential diagnosis includes abortion, molar pregnancy or uterine malignancy.

Methods: Case report of two different incidence of decidual cast at the Gynecological Department at Lillebaelt Hospital, Kolding, Denmark.

Results: Case 1: 42 years old woman with menorrhagia treated with oral contraceptive pills. Poor compliance due to pregnancy wish resulting in on-off treatment. After a longer break in treatment, she was admitted to the E.R. with abdominal pain and bleeding. A clot measuring 6x6cm was passed, pathologic examination showing decidual cast.

Case 2: 29 year old woman known with severe endometriosis, treated with IUS, Evo-conti and Zoladex. She arrived to the E.R. with abdominal pain and bleeding, passing a bigger clot with the IUS. Pathologic examination consistent with decidual cast.

Conclusions: Decidual cast occurs rarely and with a broad spectrum of clinical appearances. When aware of the diagnosis, decidual cast are recognizable. β -hCG should always be measured, ruling out ectopic pregnancy, molar and abortion. Pathologic examination is diagnostic important. Both our cases were caused by side effects to progesterone treatment, but the risk of ectopic pregnancy must be taken into consideration.

P135 - Ultrasound-guided radiofrequency ablation of uterine fibroids: short-term evaluation.

General Gynaecology

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Introduction/Purpose: To evaluate the feasibility of ultrasound-guided

radiofrequency ablation (USgRFA) for the treatment of

women with symptomatic uterine fibroids in relation to

volume of fibroid.

Methods: Forty-three women with symptomatic fibroids

underwent USgRFA for treatment of uterine fibroids.

Improvements in fibroid symptoms and quality of life

were measured by the Uterine Fibroid Symptom and

Quality of Life questionnaire scores at baseline and 3,

6 and 9 months after the intervention, and analyzed in

relation to baseline fibroid volume. Volume reduction of

fibroids was measured and the frequency of adverse events

and re-interventions was recorded.

Results: Following USgRFA, mean Symptom Severity

Scores (SSS) decreased from 60.7±17.8 to 31.2±19.5,

corresponding to an improvement of 48.6%. The total

Health-Related Quality of Life (HRQOL) score improved

by 46.4% from 55.6±20.9 to 81.4±16.6. There was

no correlation between fibroid volume at baseline and improvement in SSS and HRQOL scores. Fibroid volume was reduced in all patients, by a mean of $69.7 \pm 19.4\%$. Two (4.7%) patients underwent hysterectomy. No adverse events occurred.

Conclusions: USgRFA reduces fibroid symptom and size even in patients with larger fibroids. USgRFA is a promising new treatment for fibroids in gynecological settings and should be further investigated.

P136 - Ureter lesions due to benign gynaecologic surgery; a 10-year hospital cohort

General Gynaecology

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Introduction/Purpose: Ureteric injury is a rare but feared complication of gynaecologic surgery, notably hysterectomy. We wanted to characterize patients and their treatment following ureter injury and estimate the incidence of ureter injury due to hysterectomy in a cohort of dominantly laparoscopic procedures.

Methods: Retrospective hospital cohort. Patients diagnosed with ureteric injury after benign gynaecologic surgery and total numbers of benign hysterectomies at Haukeland University Hospital during 2006-2016 were identified from hospital surgery files. Clinical characteristics and treatment details were retrieved from patient files.

Results: In total 17 patients had a ureter injury caused by benign gynaecologic surgery and 11/1748 of benign hysterectomies were complicated by ureteric injury, an incidence of 0.6% (95% Confidence Interval (CI) 0.35-1.12). Only 4 patients were diagnosed and treated during the causal surgery: 1 ureter was sutured, 2 ureters reimplanted and 1 ureter stented. For patients with later diagnose of the injury symptoms started median 5 days (1-37) postoperatively and time until initiating treatment was median 8 days.

Minimal invasive treatment although initiated for 11 patients (9 pyelostomy, 2 ureter stent), ensured healing for only 2/11. Totally 15 patients needed specific ureter surgery. Completed treatment course (all drainage removed) was median 47.5 days (95% CI 23-58) for those diagnosed peroperatively compared to 141 days (95% CI 92-172, p-value = 0.010) if diagnosed later. All patients had ureter-/renal function reestablished.

Conclusions: Ureter injury complicated 0.6% of benign hysterectomies but all were successfully treated, mostly (15/17) by ureter specific surgery. If the injury was diagnosed peroperatively the treatment course was significantly shortened.

P137 - Using virtual-reality simulation to ensure basic competence in hysteroscopy

General Gynaecology

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Introduction/Purpose: Hysteroscopy is a technically challenging procedure. Specialty curricula of obstetrics and gynaecology appraise hysteroscopy for trainees but there is no present evidence-based training program that certifies the fundamental technical skills before surgery on patients. In addition, no present training offers mastery learning. The objectives of this study were to develop and gather validity evidence for a simulation-based test that can ensure basic competence in hysteroscopy.

Methods: We used the virtual-reality simulator HystMentor™. Six members with expertise in gynaecology, hysteroscopy, and medical education evaluated the clinical applicability of the simulator modules and included six for the test. A pilot study was carried out. Subsequently, participants of three different experience levels (medical students, residents, and experienced gynaecologists) were enrolled. Outcome measures were calculated with an algorithm composed of the simulator metrics. Validity evidence was explored using five sources (content, response process, internal structure, relations to other variables, and consequences of testing).

Results: Inter-case reliability was high for four out of five metrics (Cronbach's alpha > 0.80). Significant differences were identified when comparing the three groups' performances (p -values < 0.05). Hysteroscopy experience was significantly correlated to participants' performances (Pearson's $r = 0.49$, $p < 0.001$). With the established pass/fail score a single medical student passed the test (6.7 % false positive) and three experienced gynaecologists failed the test (27.3 % false negative).

Conclusions: We developed a virtual-reality simulation-based test in hysteroscopy with supporting validity evidence. The test is intended to ensure competency in a mastery learning program where trainees practice until they are able to pass.

P138 - Uterine fibroid incidence among Finnish women: an MRI screening study

General Gynaecology

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Introduction/Purpose: Uterine fibroids are the most common tumour in females and cause significant morbidity with menorrhagia, anemia, and pelvic pain. According to an ultrasound screening study fibroid incidence has been estimated at nearly 70% among white American women. Our earlier results for clinically diagnosed fibroids showed a 6.7% cumulative incidence. In this study our aim was to further explore the incidence among Finnish women using magnetic resonance imaging (MRI) screening data.

Methods: The Northern Finland Birth Cohort 1966 (NFBC1966) consists of 12,231 live born children during year 1966. At age 46 years a subset of study participants were invited to a lumbar MRI imaging. A careful analysis was performed for evaluation of uterine presence and fibroids with details (size and number).

Results: Overall 603 women participated to the MRI imaging, 525 women had their uterus intact, while 78 were absent. 160 of these women had identifiable uterine fibroids, thus resulting with a 30.5% incidence. 130 women had only one fibroid, 25 had two fibroids and five had three or more. The diameter of the largest fibroid ranged from 1cm to 12cm (median 2cm). Those with absent uteri will be carefully analyzed according to the national hospital discharge registry for hysterectomies, possible fibroid diagnosis and uterine agenesis and the results will be presented at the meeting.

Conclusions: The incidence of uterine fibroids seems to be significantly low among Finnish women when compared to previously published data. Most of the fibroids at age 46 years were single and small in size, possibly without any clinical relevance.

P139 - Validity of pre-operative self-reported weight in gynecological patients

General Gynaecology

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Introduction/Purpose: Body mass index (BMI) is a significant factor in relation to safety during anesthesia and surgery. Previous studies indicate that patients underestimate weight prior to consultation in an outpatient clinic. Clinicians often rely on self-reported data. Underestimated weight, and therefore BMI, could lead to incorrect pre-operative risk assessment.

Methods: We performed a prospective observational study in a gynecological outpatient clinic, Zealand University Hospital Roskilde from 1.1.2015-30.06.2015 including women planned for elective benign surgery. All women filled in a questionnaire prior to their consultation. The accuracy of pre-consultation self-reported weight and height was compared to data measured at the consultation. Data regarding age, social status and work status was registered.

Results: 41 women were included. Mean age was 47 years (SD± 10.2) and the average BMI was 26.7 kg/m² (SD± 6.2). 22 women had a BMI >25 kg/m². The overall mean difference between the participants' self-reported weight and the weight measured at their visit was 2.15 kg (SD±4.03), p=0.00148. There was no significant difference between self-reported and measured height among all the women -0.004 cm (SD±0.07). Women with measured BMI>25 kg/m² had a self-reported and measured weight difference of 3.59 kg (SD± 4.9). In women with BMI<25 kg/m² the difference was 0.53 kg (SD±1.7). There was a significant difference between the two groups, p=0.009.

Conclusions: We found a significant underestimated self-reported weight in women with BMI >25 kg/m² planned for benign gynecological surgery. However a difference of 3.59 kg has limited clinical relevance, indicating that self-reported data can be used in a pre-operative assessment.

P140 - Women with premenstrual dysphoria show right-sided dominance of frontal blood-flow.

General Gynaecology

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Introduction/Purpose: Premenstrual Dysphoric Syndrome is an affective disorder with negative mood symptoms in the premenstrual phase, almost absent in follicular phase. A co-morbidity with other affective disorders is known, some of which show asymmetries in frontal brain blood flow.

Methods: Potential differences in relative brain blood flow in women with Premenstrual Dysphoria (PMD) compared to asymptomatic controls were assessed using positron-emission tomography with [¹⁵O]-H₂O in the follicular and luteal phases for 12 women with PMD and 8 control women. Brain radioactivity – a proxy for brain blood flow – was measured in 9 regions of interest (ROIs): the medial prefrontal cortex, dorsolateral prefrontal cortex, putamen and caudate nucleus, all on both sides, and a single “whole brain” region.

Results: No significant differences in brain [¹⁵O]-H₂O-derived activity was seen between the groups in either phase for any of the 9 ROIs. However, multivariate analyses revealed a significant difference: Women with premenstrual dysphoria showed a right sided relative dominance in frontal brain [¹⁵O]-H₂O-derived activity for the joint four frontal ROIs (p = 0.0070), more pronounced for the joint two prefrontal cortex ROIs (p = 0.0005), and strongest for the medial prefrontal cortex ROIs (p = 0.0002), all in both phases of the menstrual cycle.

Conclusions: The results indicate an increased relative blood flow in the right frontal cortex in women with PMD, irrespective of menstrual phase, implying an overall relative right-sided frontal cortex dominance in PMD. Such right-sided frontal dominance has been described in several other affective conditions possibly implying a common pathophysiological trait. Results however need replication in larger studies.

Urogynaecology

P141 - A Danish national population-based cohort study of midurethral slings, 2007-2011

Urogynaecology

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Introduction/Purpose: Aims: To evaluate patient-related outcome measures of synthetic midurethral slings (MUSs) based on a national population over a five-year period and to examine the influence of department volume, surgeon volume and patient-related factors.

Methods: Materials and methods: A retrospective cohort study with prospective follow-up was carried out based on data from the Danish Urogynecological Database (DugaBase).

Results: Results: 4519 women with first-time MUS were registered in the DugaBase. Cure was achieved in 1242/1639 (75.8%). At high volume departments, TVTs were more frequently in use (74.6%) in comparison with the remaining departments (33.4%) ($p < 0.001$). TVTs were more often implanted by high volume surgeons, 1699 (58.2%) as compared to low volume surgeons, 1220 (41.8%) ($p < 0.001$). Women treated by a medium volume surgeon (adjusted OR 1.82; 95%, CI 1.01-3.28, “frequency”) and a high volume surgeon (adjusted OR 1.98; 95%, CI 1.18-3.32, “frequency”) had an increased probability of cure compared to women treated by a low volume surgeon. This difference was only relevant for women who received a TOT; medium volume surgeon (adjusted OR 2.27; 95%, CI 1.04-4.97, “frequency”) and high volume surgeon (adjusted OR 2.07; 95%, CI 1.00-4.27, “frequency”). Predictors for lowered cure were the most severe form of urinary incontinence preoperatively, mixed urinary incontinence; a preoperative usage of antimuscarinic drugs and a high BMI.

Conclusions: Conclusion: This national population-based cohort study confirmed a high cure rate of synthetic MUSs at short-term follow. It is to the best of our knowledge the largest study to indicate a learning curve for TOT.

P142 - Excluding vaginal birth - what would the demand for incontinence prolapse surgery be?

Urogynaecology

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Introduction/Purpose: Stress urinary incontinence and genital prolapse affect many women and are strongly associated with vaginal childbirth. Each year, around 9 000 women undergo surgery for these conditions in Sweden. The aim of this study was to analyse the prevalence of surgery in relation to parity and mode of delivery.

Methods: This was a prospective register study based on data from the GynOp (Swedish National Quality Register of Gynecological Surgery) from 2010 to 2016. Self-reported data on parity and mode of delivery were obtained from the register. During the study period, the register covered 86-93% of all incontinence and prolapse surgery¹.

1. <http://www.gynop.org> Swedish National Quality Register of Gynecological Surgery.2017.

Results: Of all women in the register, 96% reported data on parity and mode of delivery. Out of 33 124 women who had undergone prolapse surgery, 1.0% (95%CI; 1.0-1.2%) were nulliparous (mean age 69.7 years); 0.4% (95%CI; 0.3-0.4%) had been delivered by C-sections only (mean age 57.4 years); whereas ≥98.6% (95%CI; 98.5-99.0%) had been delivered by at least one or more vaginal births (mean age 63.5). In the stress urinary incontinence group (n=18 391), the proportion of operated nulliparous women were 2.5% (95%CI; 2.3-2.7%); 2.2% (95%CI; 2.0-2.4%) had been delivered by C-section only; whereas 95.3% (95%CI; 95.0-95.6%) had at least one or more vaginal delivery.

Conclusions: Surgery for genital prolapse and stress urinary incontinence was almost exclusively performed on women after one or more vaginal deliveries. Nulliparous women had surgery for prolapse three times more often than women delivered exclusively by one or more C-sections.

P143 - First-line treatment of pelvic organ prolapse

Urogynaecology

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Introduction/Purpose: INTRODUCTION: The primary objective of this study was to investigate the first-line treatment of pelvic organ prolapse (POP) in women referred to a Danish University hospital. Secondly the rate and cause of discontinuation of pessary treatment was investigated.

Methods: METHODS: A retrospective chart review on 794 women referred with POP. The following data were registered: age, BMI, smoking, menopause, sexual status, vaginal births, previous caesarean-sections, hysterectomy, prolapse-surgery and incontinence-surgery, previous use of pessary and pelvic organ prolapse quantification (POP-Q) system measurements. First-line-treatment was noted as watchful waiting, pessary, or surgery. Women treated with pessary were seen after three months. Extra visits, reason for discontinuation and secondary treatment-choice were noted.

Results: RESULTS: First-line-treatment was surgery in 50%, watchful waiting in 33% and pessary in 17%. Characteristics associated with choosing surgery instead of pessary were age <65 years, previous prolapse surgery, prolapse in anterior or posterior compartment and POP-Q stage ≥ 2 . Characteristics associated with choosing watchful waiting instead of pessary were age <65 and prolapse in posterior compartment. A total of 33% discontinued pessary. Discontinuation was associated with previous hysterectomy and pelvic surgery and extra visits.

Conclusions: CONCLUSION: This study showed that 50% of women referred with POP were treated with conservative treatment and thus more women could probably be treated in primary care. Women were more likely to prefer surgery to pessary at age <65 years, previous prolapse surgery, prolapse in the anterior or posterior compartment, and/or POP-Q-stage ≥ 2 . Discontinuation of pessary was associated with age <65 years, previous pelvic surgery and extra visits.

P144 - Long-term goal achievement after a tension-free vaginal tape operation.

Urogynaecology

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Introduction/Purpose: The primary aim of this study was to investigate long-term patient-reported goals after a tension-free vaginal tape operation for stress urinary incontinence.

Methods: A prospective study involving 67 women. Preoperatively patients completed the International Consultation on Incontinence Questionnaire-Urinary Incontinence Short Form (ICIQ-UI SF) (maximum score 21 for worst incontinence) and stated three goals for the operation. Postoperatively a Visual analogue Scale (VAS-scale) from zero to 10 estimated the extent to which goals were achieved. Goals were divided into five groups: 1: symptoms, 2: quality of life (physical), 3: quality of life (emotional), 4: sexual function and 5: avoidance. Short-term achievement of goals was estimated after 3 months and long-term achievement of goals after mean 28.2 months (22-34).

Results: A total of 201 goals were stated. The majority of goals (38%) were in the group concerning quality of life in physical domains. Mean VAS score for all goals was 9.1 after three months and 8.5 at long-term follow-up ($p=0.6$). ICIQ-UI SF preoperatively was mean 14.9, three months postoperatively mean 1.4 and at long-term 3.8. The small rise in ICIQ-UI SF at long-term follow-up was due to patients with episodes of urge-incontinence.

Conclusions: Our study showed that patients achieved their goals to a high degree and maintained their goals at long-term follow-up. The majority of the goals concerned quality of life in physical domains. Although a proportion of women experienced episodes of urge incontinence at the long-term follow-up mean VAS score on goals was unchanged.

P145 - Long-term outcome after late repair of the anal sphincter secondary to obstetric trauma.

Urogynaecology

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Introduction/Purpose: Vaginal delivery and obstetric anal sphincter injuries (OASIS) is the most common cause of fecal incontinence (FI) in women. Anal sphincter repair (sphincteroplasty) is the standard management of FI when a structural defect in the anal sphincter is recognized. The aim of this study was to assess the long-term functional results following late anal sphincter repair secondary to obstetric trauma.

Methods: This is a retrospective, register-based study of 407 women operated with a late anal sphincter repair within a 15-year period in Denmark (01.01.1990 to 31.12.2005). Patients were identified through the Danish National Patient Registry (LPR). Functional outcome and symptom specific quality of life score was assessed by self-reported, validated questionnaires.

Results: Mean follow-up time was 11.0 years. At the time of follow-up, mean Wexner incontinence score was 8.1 (95% CI 7.7 – 8.6) and mean St. Mark's score was 10.7 (95% CI 10.2 – 11.2). 58 % were fully continent for solid stools and 33 % for liquid stools. Only 6 % were completely continent for flatus. Long lasting incontinence symptoms (≥ 11 years) were significant associated with a higher incontinence score (9.2 vs. 6.7, $p < 0.05$)

Conclusions: Later sphincter repair has acceptable long-term functional outcome. However, accurate patient selection is essential when choosing patient suitable for anal sphincter repair. Furthermore, realistic explanation of the likely outcome is necessary. Nonetheless, the operation is well tolerated and has a low morbidity.

P146 - Mid-Urethral Sling Complications Continue to Occur 16 Years after Operation

Urogynaecology

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Introduction/Purpose: Mid-urethral sling (MUS) is a gold standard treatment for stress urinary incontinence, and women's life-long risk of undergoing MUS is 6-10%. The risk for major complications and reoperations has been low among selected patients, but a few long-term population-based studies have reported higher rates.

Methods: We conducted a retrospective cohort study of 149 women undergoing a MUS operation in 2000-2006. Data was retrieved from hospital records. The follow-up time was until the end of 2017, the mean follow-up time being 13.5 years. The complications were graded according to Clavien Dindo Classification.

Results: Altogether 53 women (35.6%) had a postoperative complication, excluding immediate transient voiding difficulties, and 20 women (10.4%) had a grade 3 complication. The occurrence of grade 3 complications peaked during the first postoperative year (40% occurred during the first postoperative year), but subsequent complications were evenly distributed throughout the follow-up period (time to occurrence: mean=5.3 ± 5.7 SD). A total of 10.1% had a reoperation (6 tape excisions, 6 bulking agent injections and 4 new MUS operations), 4.7% had cystoscopies (4 for chronic or recurring urinary tract infections, 2 for voiding difficulties, and 1 for bladder perforation) and 1.3% (2 patients) were inserted a suprapubic catheter.

Conclusions: MUS-related complications that required invasive treatment continued to occur for 16 years. More large population-based studies are needed to estimate the life-long complication risk and to identify their risk factors.

P147 - Obstetric perineal wound infection and dehiscence: a prospective cohort study.

Urogynaecology

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Introduction/Purpose: The aim was to examine prevalence and risk factors for perineal wound infection and dehiscence among women sustaining a perineal tear during vaginal birth.

Methods: A prospective cohort study conducted among 200 primiparous women with 2nd degree perineal tears/mediolateral episiotomies and 200 primiparous women with 3rd and 4th degree perineal tears. The women delivered from July 2015 until January 2018. Questionnaire interviews and clinical examinations were performed 11-21 days postpartum. Main outcome measurements were wound infection defined as either purulent drainage or wound abscess and wound dehiscence defined as a wound gap ≥ 3 mm.

Results: The risk of infection and dehiscence were 6% and 13%, respectively. Women with an episiotomy had more than two times increased risk of wound infection (OR 2.31 95%CI: (0.70-6.49)) and dehiscence (OR 2.13 (95% CI: 0.94-4.54)). Treatment with antibiotics during delivery and in the study period didn't seem to influence the risk infection (OR 0.64 (95% CI: 0.18-1.85)) but women treated with antibiotics had lower risk of dehiscence (OR 0.45 (95% CI: 0.19-0.97)). Related to perineal injury, 3rd and 4th degree lacerations seemed to be protective against wound infection (OR 0.33 (95% CI: 0.11-0.91)) while no difference was seen according to dehiscence (OR 0.73 (95%CI: 0.38-1.37)).

Conclusions: The overall risk of wound infection was low (6%), while 13% experienced dehiscence ≥ 3 mm. Treatment with antibiotics didn't seem to protect against infection but against dehiscence. Though not statistically significant, episiotomies seemed to increase the risk of infection as well as dehiscence and should be thoroughly considered before performed.

P148 - Pelvic organ prolapse and other urogynecologic issues in women with spinal cord injury

Urogynaecology

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Introduction/Purpose: It has been questioned if the risk of pelvic organ prolapse (POP) increases after a spinal cord injury (SCI); hence, the objective of this study was to investigate the occurrence of POP in women with SCI.

Methods: In this observational, cross-sectional study, women with SCI who were hospitalized after injury or attended a routine follow-up consultation in our SCI clinic during January 2013–January 2018 were offered a gynecological consultation and examination at a specialized urogynecological department. At examination, POP was classified according to the POP quantification system. Differences in baseline characteristics between women with POP stage 0–1 and POP stage ≥ 2 were investigated.

Results: A total of 98 women were included in the study. Fourteen women (14%) reported POP symptoms and 21 women (21%) had POP stage ≥ 2 at examination. The women with stage ≥ 2 were significantly older, had a higher parity, more with vaginal delivery and more postmenopausal women. The groups did not differ on median time after injury, neurological level and completeness of injury. In an age-adjusted logistic regression analysis including only women with a history of vaginal delivery (n=60), the odds of having POP ≥ 2 was 0.47 (95% CI 0.05–4.77, p=0.5) after 1–5 years followup and 0.71 (95% CI 0.16–3.08, p=0.6) after > 5 years followup, compared with < 1 year followup after injury.

Conclusions: The occurrence of anatomical POP in women with SCI is not higher than in able-bodied women, and the risk of POP does not increase with time after injury.

P149 - Pelvic organ prolapse surgery after vault suspension during hysterectomy – An observational study

Urogynaecology

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Introduction/Purpose: Hysterectomy is suspected to be a risk factor for pelvic organ prolapse (POP) and prophylactic suspension has been proposed to prevent POP. We examined risk of POP surgery in women undergoing hysterectomy on benign indication with and without prophylactic suspension.

Methods: We linked the national clinical Danish Hysterectomy and Hysteroscopy Database to administrative registries to assess data on all total hysterectomies (10 May 2012 to 31 May 2014) and risk factors for POP. Descriptive statistics, cumulative incidence curves and multivariable Cox proportional hazard models were fitted to assess the associated risk of POP in relation to prophylactic suspension two years after hysterectomy.

Results: We included 6,979 women; 6,128 (87.8%) were registered with suspension and 851 (12.2%) with specifically *no suspension*. At baseline, mean age of women with suspension were 49.8 years (standard error SE 0.1) and 48.6 years (SE 0.3) in women with *no suspension*. Cumulative incidence of POP surgery after two years of follow-up was 2.3% in women with suspension and 0.6% in women with *no suspension*.

Hysterectomy with suspension was associated with a higher crude risk of POP surgery compared with *no suspension* (Hazard ratio (HR) = 3.9 (95% confidence interval (CI) 1.6 - 9.6, p-value 0.003); however, this did not reach statistical significance after adjustment for confounders (HR = 1.7 (95% CI 0.7 - 4.3, p-value 0.27)).

Conclusions: The overall risk of POP surgery after hysterectomy was low. When accounting for confounders, we found no significant association between prophylactic vaginal vault suspension and POP surgery.

P150 - Rate of recurrent apical prolapse after high uterosacral ligament suspension.

Urogynaecology

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Introduction/Purpose: The objective of this study is to evaluate the rate of recurrent apical prolapse and describe adverse events in women who underwent high uterosacral ligament suspension (HUSLS). Recurrence is defined as symptomatic vaginal vault prolapse stage 2 or more (according to the International Continence Society (ICS) quantification system).

Methods: A retrospective chart review of 126 women, who underwent HUSLS for apical prolapse from 2002-2009 at Aarhus University Hospital, Denmark. 97% attended a six months clinical control. Medical charts were reviewed for a mean period of 7.2 years. Any new contacts due to prolapse were noted.

Results: Prior to the operation, 77% of the women were hysterectomized and 58% had previous prolapse surgery. 71% had stage 2 apical prolapse, whereas 25% had stage 3 or 4.

At six months follow-up, 21% of the women had recurrent symptomatic apical prolapse. At the end of the study period the percentage was 23. Repeat surgery was performed in 21% of the cases.

12% of the women had symptomatic recurrent prolapse in other compartments six months after operation. At the end of the study period it was 18%.

Totally, 39% of the women were re-operated. Serious adverse events were seen in 7% (ureteral injury/kinking 2%, bladder injury 2%, bowel injury 2% and 1% haemorrhage).

Conclusions: The rate of recurrent apical prolapse associated with HUSLS is 23% in this cohort characterized by high number of previous prolapse operations and a significant degree of prolapse. However, the rate of serious adverse events appears low.

P151 - Risk of unanticipated abnormal pathology at the time of and after uterine sparing pelvic organ prolapse (POP) surgery.

Urogynaecology

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Introduction/Purpose: The aim of this study was to assess the risk of unanticipated abnormal gynecologic pathology at the time of the Manchester-Fothergill (MF) operation, performed from 1996 - 2016 at Aalborg University Hospital, and to assess the risk of developing abnormal gynecological pathology after surgery - to better understand the risks of uterine sparing surgery.

Methods: This is a retrospective cohort study. Information regarding parity, body mass index and smoking status at the time of surgery was registered. Number of cervical smear tests, endometrial biopsies and cervical and endometrial pathology before and after surgery was registered as well as cervical pathology in the resected collum. Data was collected from clinical notes via the electronic medical record and the Danish urogynecological database.

Results: In this period 328 MF operations were performed, and 299 were included in the study. Mean follow-up time was 7.6 years (range 0-21.4 years).

In 5 patients we found unexpected cervical pathology in the resected collum.

After the MF operation six patients (1.8%) developed gynecological histological findings. We found five patients (1.5%) with benign endometrial hyperplasia/hyperplastic polyps without atypia. There was one patient (0.3%) who developed cervical intraepithelial neoplasia, CIN 1, but after six months this case had turned normal on a new smear test.

Conclusions: The Manchester Fothergill operation appears to have acceptable long-term safety and a low risk of future gynecologic pathology.

P152 - Tension-free vaginal tape – clinical outcomes and risk factors for recurrence

Urogynaecology

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Introduction/Purpose: The retropubic tension-free vaginal tape (TVT) procedure has since the late 1990s been the preferred method for primary surgical treatment of stress urinary incontinence (SUI) and stress-dominant mixed urinary incontinence (MUI) in women. This study presents short- and long-term outcomes and assesses risk factors for recurrence.

Methods: In a case-series design we assessed primary surgery with the TVT procedure in 621 women from 1998 to 2012 with follow-up through 2015. Information from medical records was transferred to a case-report-form comprising data on early and late complications, and on recurrence of UI defined as bothersome stress urinary incontinence symptom or repeat surgery. All analyzes were performed in SPSS with the chi-squared and Cox regression analyzes.

Results: At the 10 year follow-up both SUI women with perioperative complications (HR 5.1 (95% CI: 2.6-10.0)) and MUI women (HR 2.5 (95% CI: 1.7-3.7)) had a significant increased risk of recurrence of SUI symptoms compared to SUI women operated without complications. Overall cumulative cure rates after one, five and ten years were 92% (95% CI: 90-94%), 79% (95% CI: 75-83%) and 69% (95% CI: 63-75%), respectively. Two patients (0.3%) had recurrent surgery. Serious tape complications were rare, and only 0.3% needed major surgical treatment. Six patients (1.0%) had the tape cut due to voiding dysfunction (VD), and nine (1.5%) reported VD > 3 months after surgery.

Conclusions: MUI at time of surgery and perioperative complications predict recurrence at long-term follow-up after retropubic TVT. We found high safety on tape durability within 10 years after surgery.

P153 - The performance of the question “vaginal bulging” in nulliparous women

Urogynaecology

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Introduction/Purpose: Vaginal bulging is considered the key symptom for genital organ prolapse. The validity of this question in nulliparous women is however insufficiently investigated. The aim was to investigate the age-related prevalence and frequency of symptomatic pelvic organ prolapse (sPOP) and other pelvic floor symptoms in non-pregnant nullipara, aged 25-64 years (n=10 187).

Methods: This national postal and web-based questionnaire survey was conducted in 2014. Age and BMI adjusted prevalence was calculated from a logistic regression model to evaluate the prevalence of sPOP.

Results: The response rate was 52%. Women with sPOP were younger, shorter, more often overweight and obese. Of all nullipara, 15 reported prior surgery for prolapse (0.16%). sPOP decreased from 9.8% in the youngest age group (25-34 years) to 6.1% in the oldest (55-64 years). sPOP was more often experienced as bothersome, aggravated by straining and heavy lifting, and more frequently in older women. Vaginal/vulval chafing/rubbing feeling was most prevalent among the youngest 14.2%, decreasing to 7.8% among the oldest. This symptom occurred three to five times more often in those with sPOP.

Conclusions: The high prevalence of sPOP in this study was contradictory to most earlier reports, that have shown that genital prolapse is rare in nullipara. sPOP did not seem to be a valid tool for genital prolapse in nulliparous women aged 25-64 years. The explanation of our results may be the low probability of the clinical condition, the dominance of weak and infrequent symptoms, and not least clustering of alternative conditions mimicking sPOP

P154 - Treatment of urovaginal fistula by catheter drainage; a national competence-centre-cohort

Urogynaecology

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Introduction/Purpose: Urovaginal fistula leads to urinary incontinence. Surgery or radiation is the dominant cause in industrialized countries. Surgical repair (trans-vaginal or abdominal) is the main treatment. Urine deviation (catheter drainage/pyelostomy) reduces leakage and can confer healing without surgery. Gynaecological department Haukeland University Hospital has since 1995 prospectively registered clinical characteristics and treatment-outcomes of genital fistulas, from 2012 as the national referral centre.

Methods: Prospective hospital-registry-based cohort study of urogenital fistulas treated by catheter drainage.

Results: During 1995-2016, 97 women were diagnosed with a total of 98 urogenital fistulas. The majority 72/98 (74%) were vesico-vaginal, 13 urethro-vaginal and 7 uretero-vaginal. Surgery 81/98 (83%) was the dominant cause; hysterectomy n=55, TVT/Mesh-procedure n=13.

In all, 54 women received catheter treatment for median 42.5 days (95% Confidence Interval (CI) 30-53), 11 healed without surgery (20%, 95%CI 11-30) while 39 women were treated without any preceding catheter treatment. Out of 81 fistula procedures 77 (95%) healed. Of the radiation fistulas 1/8 healed by catheter drainage alone, 1/8 by surgery while five women received permanent pyelostomy and one woman underwent a Bricker-procedure.

Patients healed by catheter treatment alone, received the catheter significantly sooner after symptoms started than those needing surgery, median 3 days (95%CI 0-12) versus 39.5 days (95%CI 22-69, $p < 0.001$). Duration of catheter drainage was not significantly different between the two groups.

Conclusions: Catheter drainage alone conferred healing in 20% of urogenital fistulas with significantly higher chance of cure for those with the shortest lag-time from injury (or start of symptoms) to initiating catheter treatment.

P155 - Vaginal pessaries in the management of symptomatic pelvic organ prolapse in rural Kilimanjaro, Tanzania: a pre-post interventional study

Urogynaecology

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Introduction/Purpose: Pelvic organ prolapse (POP) is a common female health condition in both low- and high-income countries with prevalence rates of 12-55% reported in sub-Saharan Africa. While data from developing countries have shown use of pessary improves symptoms and quality of life associated with POP, the acceptance and outcomes of pessary for POP treatment have not previously been evaluated in a low-income setting. We aimed to evaluate acceptance and outcomes of vaginal pessaries among North Tanzanian women with symptomatic POP.

Methods: A pre-post interventional study involving seventy-one women with POP symptoms and a stage II or more on the POP quantification test (POP-Q) fitted with a vaginal pessary. Pelvic examination, POP Distress Inventory (POPDI-6) and POP Impact Questionnaire (POPIQ-7) were completed at baseline and at 3- and 12–18 months.

Results: Being very satisfied or satisfied was reported by 78.4% of the women at 12–18 months follow up where 81% wanted to continue using the pessary. The median overall scores of both the POPDI and POPIQ reduced from 55 and 54.2 respectively at baseline to 25 ($p<0.001$), both, at 3 and 12–18 months. Vaginal discharge was reported in 72.4% and 32.4% of the women at 3 and 12–18 months, while 72.4% and 25% of the women had some degree of granuloma, erosion or infection at 3 and 12–18 months, respectively.

Conclusions: Vaginal pessaries improve symptoms and quality of life associated with symptomatic POP. Therefore, it may be a treatment option in managing symptomatic POP in low-income countries like Tanzania.

Gynaecological Oncology

P156 - Burden of HPV-caused cancers in Denmark and the potential effect of HPV-vaccination

Gynaecological Oncology

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Introduction/Purpose: In Denmark, the Human Papillomavirus(HPV)- vaccination has been given to girls since 2008. From January 2018 vaccination also includes boys attracted to boys aged 15-19 year, as this group would not benefit from herd immunization. The aim was to examine the burden of HPV-caused cancers in women and men, and to evaluate the potential for HPV-vaccination in cancer control.

Methods: Data were retrieved from the literature, NORDCAN, and from Danish national registries. Number of HPV-caused cancers was calculated from number of HPV-related cancers and the proportion known to be caused by high-risk(HR)-HPV.

Results: One fifth of women and almost one third of men in Denmark were found to be HR-HPV positive. Per year, 548 HPV-caused cancers were diagnosed in women and 234 in men. However, including screening prevented cervical cancers, the burden of cancers caused by HPV-infection would be 1300–2000 in women as compared to 234 in men. In the beginning 80% of a birth cohort of girls was vaccinated. Coverage dropped dramatically from 2013 due to public attention to possible side effects, although no causal association was found. The coverage has increased again leaving a gap in the number of girls vaccinated as HPV-naïve.

Conclusions: Taking screening prevented cervical cancers into account; the cancer control potential of HPV-vaccination is considerably higher in women than in men. A nine-valent vaccine has recently been introduced as standard HPV-vaccine in Denmark. It is estimated to prevent 90% of cervical cancers. Therefore HPV-vaccination could reduce the burden of screening on women and on health care resources.

P157 - Clinical course of untreated cervical intraepithelial neoplasia grade 2 under active surveillance - a systematic review and meta-analysis

Gynaecological Oncology

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Introduction/Purpose: Although CIN2 is commonly treated with local excisional treatment of the cervix, a substantial proportion of CIN2 lesions may regress spontaneously. We estimated the regression, persistence and progression of untreated CIN2 lesions managed conservatively and compliance with follow-up.

Methods: Three major databases were searched from January 1, 1973 to August 20, 2016 for studies reporting on histologically confirmed CIN2 in non-pregnant women managed with active surveillance for at least three months. Two reviewers extracted data and assessed risk of bias. We calculated pooled proportions for each outcome with random-effects model and assessed heterogeneity using I^2 statistics.

Results: We identified 36 studies that included 3,160 women. At 24 months, the pooled rates were 50% (11 studies, 819/1,470 women, 95% confidence interval (CI) 43%-57%; I^2 77%) for regression, 32% (8 studies, 334/1,257 women, 95%CI 23%-42%; I^2 82%) for persistence, and 18% (9 studies, 282/1,445 women, 95%CI 11%-27%; I^2 90%) for progression. Among 1,069 women aged 30 or less, the rates were 60% (4 studies, 638/1,069 women, 95%CI 57%-63%; I^2 0%), 23% (2 studies, 226/938 women, 95%CI 20%-26%; I^2 97%) and 11% (3 studies, 163/1,033 women, 95%CI 5%-19%; I^2 67%), respectively. The rate of non-compliance (measured in prospective studies with follow-up between 6 and 24 months) was 10%.

Conclusions: The majority of CIN2 lesions, particularly in young women, regress spontaneously. Active surveillance, rather than immediate intervention, is therefore justified, especially among young women who are likely to adhere to monitoring.

P158 - Costs and consequences of introducing robotic surgery for women with gynecological cancer

Gynaecological Oncology

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Introduction/Purpose: Background

The demand for more advanced medical technologies is growing. Robotic Minimally Invasive Surgery (RMIS) is the latest technology and assumed to be more expensive in the short-run compared to Laparoscopic Minimally Invasive Surgery (LMIS) and Open Abdominal Hysterectomy (OAH). RMIS has been rapidly adopted in the treatment of gynecological cancer, and is increasingly used for advanced surgical procedures.

Aim

To evaluate the costs and consequences of RMIS compared to LMIS and OAH in women with endometrial cancer.

Methods: Methods

A register-based study comprising 5,700 women from the Danish Gynecological Cancer Database. Data are linked in Statistics Denmark with comprehensive information on visits in all hospitals, activities in primary healthcare, prescription medication and social data such as education, labor market affiliation, income, and unemployment benefit reimbursement.

The study consists of:

1. A systematic review evaluating costing methodology for robotic surgery in gynecology.
2. Evaluation of the societal costs of RMIS in the Region of Southern Denmark.
3. Assessment of changes in long-term costs and consequences of RMIS. Nationwide register data will be used for the analysis.

Results: Results

The systematic review found that inadequate reporting of the study perspective, short-term horizon, and use of charge data decreased the methodological quality.

Further results will be provided; comparing the costs and consequences before and after the introduction of RMIS with LMIS and OAH.

Conclusions: Conclusion

In Denmark there is a unique possibility to follow high quality health care data over time. This project provides comprehensive analysis using the societal perspective with a long follow-up.

P159 - High risk Human Papilloma virus in Tanzania-risk factors and type distribution

Gynaecological Oncology

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Introduction/Purpose: Cervical cancer is a leading cause of cancer related death among women in Tanzania. The objective of the present study was to describe risk factors for of HrHPV infection and determine type specific distribution of HrHPV among HIV+ and HIV- women in Tanzania.

Methods: A cross-sectional study was conducted in cervical cancer screening clinics in Kilimanjaro and Dar es Salaam in Tanzania between August 2015 and July 2016. Bivariate and multivariate logistic regression was performed to identify risk factor for HrHPV infection while controlling for age.

Results: A total of 4038 women were recruited. HIV + women had a 4 times increased risk of HrHPV infection OR=4 (95% CI:-3.3-4.8). Other risk factors were being divorced OR =2.13; (95%CI:1.2-3.3) and cohabiting OR=2.05(95%CI:1.7-2.5), young age at sexual debut (OR=1.5:95% CI:-1.2-1.9), and increasing number of sexual partners (OR 1.88:95%CI;1.3-2.8) . In addition, among HIV+ women, low CD4 count was associated with an increased risk of HrHPV infection (OR:1.995% CI;1.4-3.9).

The prevalence of HrHPV in HIV+ was (37.5%) and (13.7%) in HIV- women. In both HIV+ and HIV- women, Hpv52 was the most prevalent type followed by Hpv16 and Hpv18.

Conclusions: HIV infection, sexual risky behaviour and low CD4 count are associated with risk of HrHPV infection. Reduction of sexual risk behaviour in the general population and interventions aiming at improving CD4 count in HIV positive women may decrease burden of HrHPV infection.

P160 - HPV prevalence and HPV-related dysplasia in elderly women

Gynaecological Oncology

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Introduction/Purpose: In Sweden, where screening ends at the age of 60, about 30% of the cervical cancer cases

occur in women older than 60. The aim of the present study was to investigate the prevalence

of HPV and cervical dysplasia in women of 60 years and above.

Methods: From September 2013 until June 2015, 1051 women aged 60±89 years (mean 68 years)

were sampled for an HPV test when attending an outpatient gynecology clinic. Women with

positive results had a second HPV test and liquid based cytology (LBC), after 3.5 months on

average. Those with a positive second HPV test were examined by colposcopy, and biopsy

and a sample for LBC was obtained.

Results: The prevalence of HPV was 4.1%, (95%CI 3.0±5.5, n = 43) at the first test, and at the second

test 2.6% remained positive (95%CI 1.7±3.8, n = 27). The majority of women positive in

both HPV tests, had dysplasia in histology, 81.5% (22/27) (4 CIN 2±0.4%, 18 CIN 1±1.7%).

HPV-related dysplasia was found in 2.1%, (95%CI 1.3±3.2, n = 22) of the 1051 women.

Four of the 22 women with positive HPV tests also had abnormal cytology, one ASCUS and

three CIN 1. No cancer or glandular dysplasia was detected

Conclusions: A significant proportion of elderly women were found to have a persistent cervical HPV

infection. Among them there was a high prevalence of CIN diagnosed by histology. The

HPV test showed high sensitivity and specificity in detecting CIN in elderly women, while

cytology showed extremely low sensitivity

P161 - Impact of HLA-G on the outcome of genital and oral HPV infections in women

Gynaecological Oncology

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Introduction/Purpose: Human leukocyte antigen (HLA)-G has an immunotolerant role in the immune response. Thus, it could be one of the important host factors associated with the natural history of human papillomavirus(HPV) infection. Our aim was to evaluate the role of HLA-G in the outcome of genital and oral HPV-infections in women.

Methods: Altogether 313 women from the Finnish Family HPV-study, who were followed-up for six years, were included to the analyses. Women's genital and oral samples were all tested for 24 different HPV-types with multiplex HPV-genotyping. HLA-G alleles were determined through direct DNA-sequencing. Unconditional logistic regression was used to determine associations between HLA-G genotype and HPV-infection outcome.

Results: The most common HLA-G genotypes were the wildtype G*01:01:01/01:01:01 (31.3%) followed by G*01:01:01/01:01:02 (26.8%). G*01:01:01/01:01:01 genotype was associated with the likelihood of having any oral HPV-infection during the follow-up, OR 2.24 (95% CI 1.35-3.73) and was also related to the clearance of any oral HPV, OR 2.22 (95% CI 1.31-3.78). Oral warts were associated with genotypes G*01:01:01/01:01:02 and G*01:01:01/01:01:03, ORs of 4.90 and 5.62 (95% CI range 1.04-30.25). G*01:01:01/01:01:02 and G*01:01:01/01:04:01 both protected of ever having any oral HPV-infection, ORs of 0.58 and 0.51 (95% CI range 0.27-0.97). G*01:01:02/01:04:01 increased any oral HPV persistence OR 3.85 (95% CI 1.25-11.84) and was also associated with increased infertility OR 6.23 (95% CI 1.72-22.47).

Conclusions: The host HLA-G genotypes appear to play a noteworthy role on the outcome of oral HPV-infection in women but seem to have only a minor effect on the genital HPV-status.

P162 - Improved survival for Danish women with advanced epithelial ovarian cancer treated in gynecological-oncological tertiary centers.

Gynaecological Oncology

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Introduction/Purpose: From 2005 and onward, the five Danish gynecological-oncological tertiary centers have treated an increasing number of women with ovarian cancer due to centralization of the treatment that were recommended by The Danish National Board of Health in 2001. Our aim was to investigate if survival has improved for Danish women with advanced epithelial ovarian cancer in the early phase of the centralization compared to the late phase of centralization.

Methods: Women who were treated in a Danish gynecological-oncological tertiary center and registered in the Danish Gynecological Cancer Database with primary stage IIIC or IV epithelial ovarian cancer in the ovaries, Fallopian tubes and the peritoneum from 1 January 2005 to 31 December 2012 were included. Follow-up was until 19 January 2018 or dead, whichever came first.

Results: 2075 patients were eligible. From 2005 to 2012, the number of patients treated in Danish gynecological-oncological tertiary centers increased gradually from 166 to 322 per year. Median overall survival in the early treatment period (2005-7) and late treatment period (2008-12) were 24.2 and 27.0 months respectively ($p=0.004$). In a multivariable Cox regression analysis including age, stage, histology, co-morbidity, ASA score, ECOG performance status and complete tumor debulking, the hazard of death was reduced with 12% (95% CI 2-21%) in the late treatment period compared to the early treatment period.

Conclusions: The survival of Danish women with advanced epithelial ovarian cancer treated in Danish gynecological-oncological tertiary centers has improved significantly during the past decade. The results emphasize the benefits of centralized treatment to high-volume centers.

P163 - Nationwide introduction of robotic surgery for endometrial cancer reduces complications

Gynaecological Oncology

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The author has chosen not to publicise the abstract.

P164 - Risk factors of epithelial ovarian carcinomas among women with endometriosis: a systematic review

Gynaecological Oncology

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Introduction/Purpose: To evaluate the published literature on epidemiologic risk factors for epithelial ovarian cancer (EOC) among women with a diagnosis of endometriosis.

Methods: A systematic literature search was conducted in PubMed and Scopus. Studies comparing epidemiologic risk factors of EOC among women with endometriosis were included. A quality assessment was conducted using the Newcastle-Ottawa Scale.

Results: Eight of 794 articles met the inclusion criteria; all were case-control studies. A lower risk of EOC was observed in women with documented complete surgical excision of endometriotic tissue and suggested among women with unilateral oophorectomy. The use of oral contraceptives (≥ 10 years) may be associated with a lower risk of EOC among women with endometriosis, whereas older age at endometriosis diagnosis (≥ 45 years, pre- or postmenopausal), nulliparity, hyperestrogenism (endogenous or exogenous), premenopausal status at endometriosis diagnosis solid compartments as well as larger size of endometrioma (≥ 9 cm in diameter at endometriosis diagnosis) were all associated with an increased risk of ovarian cancer.

Conclusions: A subgroup of women with endometriosis characterized by endometriosis observed through surgery or imaging after the age of 45 years, nulliparity, post-menopausal status at endometriosis diagnosis, larger size of endometrioma (> 9 cm) at endometriosis diagnosis, hyperestrogenism (endogenous or exogenous) and/or cysts with solid compartments may have an elevated risk of EOC. However, due to the limited number and size of studies in this area we cannot draw definitive conclusions. Further research into a risk factor profile among women with endometriosis is needed before clear recommendations can be made.

P165 - Risk of endometrial cancer in women with endometrial hyperplasia

Gynaecological Oncology

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Introduction/Purpose: Endometrial hyperplasia (EH) is a precancerous lesion characterized by excessive proliferation of the endometrium and is strongly related to the development of endometrial cancer. The existing guidelines on clinical follow-up of women diagnosed with EH are sparse. There are no studies including long-time follow-up and no data available to estimate risk of recurrence of EH or endometrial cancer in Danish women initially diagnosed with all types of EH.

Therefore, the aim of this study is to investigate the long-term prevalence of recurrence of EH or development of endometrial cancer in Danish women initially diagnosed with EH.

Methods: Prospective study. All women diagnosed with EH at Randers Regional Hospital between 2000 and 2015 are included. They are invited to gynaecological examination with transvaginal ultrasound and endometrial biopsies taken using mini-hysteroscopy. Further data will be gathered through interviews and medical records.

Results: Ongoing study. Preliminary results on patient characteristics together with initial and subsequent treatment will be presented along with data from a pilot study on long-term follow-up using transvaginal ultrasound and mini-hysteroscopy.

Conclusions: The study can contribute to the goal of being able to identify women with EH who have a high risk of progression to cancer. Furthermore, data can be used to evaluate the need for long-term follow-up after the initial diagnosis with EH and help revise the existing guidelines on clinical follow-up of these women.

P166 - The best are the worst: Computer adaptive testing of physical health after robotic cancer surgery.

Gynaecological Oncology

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The author has chosen not to publicise the abstract.

P167 - Uterine endometrioid adenocarcinoma with a co-existing non-gestational choriocarcinoma

Gynaecological Oncology

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Introduction/Purpose: Uterine endometrioid adenocarcinoma with a co-existing non-gestational choriocarcinoma (NGCC) is a rare tumor. NGCC most commonly arise from ovarian germ cell tumors, but can originate from any epithelial cancer. The incidence of NGCC is unknown and the pathogenesis is poorly understood.

Methods: A 56 year-old woman underwent a robotic assisted hysterectomy with bilateral salpingoophorectomy and pelvic lymphadenectomy for an endometrioid adenocarcinoma, FIGO stage IB.

Results: Final histology showed two distinct tumor types; endometrioid adenocarcinoma and non-gestational choriocarcinoma with intimately admixed malignant appearing trophoblastic cells with a positive immunohistochemical reaction to human chorionic gonadotropin. Genotyping of formalin-fixed paraffin-embedded tumor tissue is ongoing.

Conclusions: In contrast to gestational choriocarcinoma (GCC), NGCC is unrelated to pregnancy. NGCC can be of germ cell origin or somatic from a carcinoma e.g. in the endometrium, bladder, colon and lung. GCC and NGCC cannot be distinguished morphologically, but only NGCC has been reported to co-exist with a carcinoma.

Several theories concerning pathogenesis of uterine NGCC exist: 1) germ cell remnants in utero as a result of insufficient embryonic migration to the gonads, 2) ectopic totipotent germ cells from the early embryonic development which avoided subsequent apoptosis and 3) retrodifferentiation/dedifferentiation of tumor cells in a malignant tumor.

Gestational and non-gestational choriocarcinomas are pathologically and morphologically similar, but differ in genetic origin, immunogenicity, sensitivity to chemotherapy and prognosis with GCC having a better prognosis than NGCC. Genetic analysis for determining the origin of the CC component is recommended for deciding on the optimal treatment.

Other

P168 - A national needs assessment to define curricular content for simulation-based training in gynecology and obstetrics

Other

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Introduction/Purpose: Simulation has been utilized in gynecology and obstetrics (Ob Gyn) for decades, providing trainees with necessary skills amidst challenges including patient safety concerns, limited training opportunities, and rare cases in obstetrics. However, development of training programs is mostly based on available equipment or experiential notions. To ensure that training is aligned to current needs, a needs assessment should be performed. The aim of the study was to perform a needs assessment to identify technical procedures that should be included in a simulation-based curriculum.

Methods: The Delphi technique was used to perform a needs assessment by inviting 165 participants who are involved in Ob Gyn education in Denmark. Round 1 was brainstorming to identify technical procedures that a new specialist should learn. Round 2 used a needs assessment formula to explore frequency of procedures, number of physicians performing procedure, risk and/or discomfort and feasibility. Round 3 included elimination and re-prioritization.

Results: The response rates were 61%, 50%, and 53%, respectively. The procedures that were identified in Round 1 were: gynecology (n=51), obstetrics (n=40) and general procedures (n=10). Round 3 resulted in a prioritized list of procedures where gynecology (n=17) is led by basic laparoscopy, vaginal ultrasound, and laparoscopy with tubotomy and salpingectomy; obstetrics (n=16) is led by basic resuscitation of newborn, vacuum extraction, and management of shoulder dystocia, and general (n=1) consisted of basic resuscitation of adult.

Conclusions: The needs assessment using the Delphi process identified a prioritized list of technical procedures that guides the development of simulation-based training programs in gynecology and obstetrics.

P169 - Attitude toward emergency contraceptive pill and intention to use condoms in Korean male university students

Other

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The author has chosen not to publicise the abstract.

P170 - Claims for compensation after gynecological treatment in Norway

Other

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Introduction/Purpose: The Norwegian System of Patient Injury Compensation (NPE) evaluates all patient reported claims in Norway. Our aim was to review complaints eligible of compensation in relation to gynecological treatment.

Methods: A retrospective, descriptive study of gynecological compensation claims during a 14-year period, based on patient files from NPE. In all, 1454 women claimed compensation for injury related to gynecological treatment in Norway from 2001 to 2013.

Results: Approval of compensation was granted for 438 (30.1%) women. Participation was declined by 11 women and 16 cases were excluded, leaving 411 cases for further analyses. Clinical guidelines were not followed in 40.5% of these cases. The most common reason for complaint was surgical complications (67.6%), delayed diagnosis (22.4%), incorrect diagnosis (17.0%) and failure of communication (11.7%). The main consequences of injuries were need of extensive treatment (64.2%), permanent injury (55.2%) and/or impaired physical ability (41.9%). Worsening of cancer prognosis occurred in 14.1%, and death due to failure in 7.1%. Most failures occurred during treatment period (75.2%), and failure on an individual level (62.2%) was more common than failure on a system level (13.9%).

Conclusions: Our study shows that surgery-related injuries are most often compensated in patient-reported harms after gynecological treatment in Norway. The main reason for injuries seems to be non-adherence to national guidelines and good clinical practice. The study indicates that increased focus on and adherence to guidelines and focus on surgical skills have great potential to improve patient safety in gynecological treatment in Norway.

P171 - Conception and delivery-plan for Nordic electronic textbook of gynecology & obstetrics

Other

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Introduction/Purpose: The Nordic Universities traditionally provide medical textbooks in national languages. With implementation of gynecology-obstetrics as international semester, English became the teaching language, thus English teaching materials suited for a Nordic curriculum were needed. We aimed to develop an English electronic textbook in gynecology and obstetrics for Nordic medical students. The textbook should use modern pedagogy principles and be freely available (free of charge) also for students in less resourceful settings.

Methods: One enthusiastic Danish professor gained formal support and a start-up grant from the NFOG (Nordic Society of Obstetrics and Gynecology) board. The project was promoted within all Nordic national societies and an editorial board was formed to propagate the process.

Results: In total 4 out of 5 Nordic countries and a NFYGO (Nordic Federation of Young Obstetricians and Gynecologists) candidate are represented in the editorial board. A detailed plan of action contains chapter themes, type of educational content (videos, illustrations, MCQs), names of chapter authors (each chapter having at least three different countries and preferably a junior doctor represented), budget, legal advisors, medical illustrator, publication platform and “Due-date” for release was set as October 2018. Two test-chapters have been fully written and synopses for 23 out of total 48 chapters have been developed.

Conclusions: The Nordic textbook is developing, properly monitored by skilled gynecologists and obstetricians. Given ample support by the NFOG board the risk of becoming post-term or rupture during delivery will be negligible and a healthy “English-text-book-baby” should be viable by October 2018.

P172 - Different stress responses by healthcare professionals during simulated medical emergencies.

Other

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Introduction/Purpose: Stress has been linked to both impairments and improvements in performance and learning. The purpose was to describe differences in physiological stress (salivary cortisol) and subjective stress (Strait Trait Anxiety (STAI); tension/pressure-dimension of intrinsic motivation inventory (IMI) among participants in simulated obstetrical emergencies.

Methods: The study was part of a randomised trial comparing the effects of in-situ versus off-site simulation and included 97 participants (39 doctors and 58 allied healthcare-professionals). *Outcome:* Salivary cortisol: obtained at baseline, after 5 and 10 minutes; STAI self-reports: completed at baseline and after 10 minutes. The IMI pressure/tension-dimension self-reports: completed within 1 week. *Statistical analysis:* Differences in subgroups in physiological and subjective stress responses were estimated using linear mixed models (cortisol) and linear models (difference between peak and baseline STAI, IMI).

Results: The doctors had 13% (CI:1-23%) greater cortisol-level than allied healthcare-professionals ($p=0.04$) during both simulations. In contrast, doctors reported lower STAI scores than allied healthcare-professionals (2.7 points, CI:0.60-5.32, $p=0.02$) in the 1st simulation, but no differences in the 2nd simulation. The IMI dimension of tension/pressure was also higher for the allied healthcare-professionals compared with participating doctors (0.5 points, CI:0.03-0.98, $p=0.04$).

Conclusions: Doctors manifested greater physiological stress responses, but less subjective stress responses, compared with allied healthcare-professionals. These results may raise potential mental health concerns as physiological stress in the absence of subjective stress has been associated with maladaptive coping strategies. Stress-management courses among healthcare-professionals may be prove to beneficial. Take home message:

Stress measurements are complex and multidimensional approaches are important.

P173 - Early detection of substance use in pregnancy

Other

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Introduction/Purpose: Use of tobacco, alcohol, addictive medicines, and illegal substances in pregnancy increases the risk of pregnancy complications and temporary and persistent damage to the unborn child. Early detection and intervention may mitigate these adverse effects. The Danish Family Clinics are specialist centres for counselling and treatment of such families at risk. Results from a pilot study indicate that the number of pregnant women, who may benefit from treatment and counselling in the Family Clinics, is underestimated.

Methods: In this project, we will conduct an anonymous nationwide screening of 3000 pregnant women to detect use of tobacco, alcohol, addictive medicines, and illegal substances. We will use a new, improved dipstick screening supported by validated confirmation analyses. As a new initiative, the dipstick is promising to detect a wider range of relevant substances, but also a small alcohol intake down to two units three days after intake. Also, we will validate all the substance components of the dipstick with confirmation analyses among 200 pregnant women, who are already affiliated to the Family Clinics comprising a known and much higher prevalence of substance use.

Results: This study will inform future, national strategies to identify women at risk and therefore may benefit from the support offered by the Family Clinics.

Conclusions: The results are important contributions to research within screening for, and treatment of, substance use in the entire population.

P174 - Effect of oxidative stress on sperm cells investigated by label-free Quantitative Phase Microscopy

Other

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Introduction/Purpose: Male factor is a recognized cause of infertility in approximately one-third of all cases. Sperm dysfunction can be due to oxidative stress, which is known to affect the integrity of the sperm genome, result in lipid peroxidation, loss in membrane fluidity and decrease in sperm motility. Semen analysis is the most common diagnostic tool used for assessing male reproductive health. However, the results of analysis can be inconsistent. The variability may be reduced by implementing *Quantitative Phase Microscopy* (QPM), a noninvasive contrast imaging technique allowing quantitative visualization of the cells with subwavelength axial accuracy.

Methods: The aim of this study was to investigate the effectiveness and accuracy of QPM method by comparing quantitative phase of heads of stressed sperm cells treated with different concentrations of H₂O₂ with that of normal sperm cells.

Results: We observed a decrease of optical path difference produced by sperm cells after H₂O₂ treatment in concentration dependent manner. This correlated with a dose-dependent decrease in progressive motility. These observations support the hypothesis that changes caused by oxidative stress could result in differences in maximum phase shift compared to the normal sperm cells.

Conclusions: Taken together, our results support the idea that non-invasive QPM could be applied to sperm analysis to assess male infertility more objectively. The relationship between sperm head phase shift and fertilization potential of sperm needs to be further investigated.

P175 - Evidence of no association between HPV and breast cancer.

Other

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Introduction/Purpose: Globally, breast cancer is the most frequent cancer among women. Studies reported an increased risk of breast cancer among women with prior cervical dysplasia. This study aimed to describe the prevalence of human papillomavirus (HPV) in breast cancer and explore if women with prior cervical neoplasia carry an increased risk of HPV positive breast cancer compared to women without.

Methods: This case-control study identified 193 Danish women diagnosed with breast cancer (1998-2012) at Aarhus University Hospital or Copenhagen University Hospital Herlev. Cases were 93 women with cervical intraepithelial neoplasia grade 3 or worse (CIN3+) prior to breast cancer. Controls were 100 women without prior cervical dysplasia. HPV testing and genotyping was done using SPF₁₀ PCR-DEIA-LiPA₂₅ and an in-house semi-Q-PCR assay.

Results: Overall HPV prevalence in breast cancer for the assays was 1.55% (95% CI 0.32 – 4.48) and 0.52% (95% CI 0.01 – 2.85), respectively. There was no difference in HPV prevalence between cases and controls (2.15% vs. 1.00%, p=0.61 and 1.08% vs. 0.00%, p=0.48). HPV prevalence in CIN3+ was 94.62% (95% CI 0.88 – 0.98). Concordance between the assays was 98.60%.

Conclusions: HPV prevalence in breast cancer is very low suggesting no aetiological correlation between HPV and breast cancer.

P176 - Language Skills and Level of Experience among Arabic-Speaking Healthcare Interpreters in Denmark; an Explorative Study

Other

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Introduction/Purpose: Denmark has become a multicultural society over the past three decades, with 12.8% of the population being immigrants and their descendants. Many of these risk inequality in access to health and in health outcomes because of language barriers. The quality of healthcare interpreting services has recently been discussed by politicians and the media. The present explorative study investigated the sociodemographic characteristics, level of experience and linguistic skills of Arabic-speaking healthcare interpreters in Denmark.

Methods: Snowball sampling (including social media) was used to recruit interpreters. Data were collected through individual telephone interviews based on an interview guide containing structured and semi-structured questions. Interpreters' language skills were assessed subjectively based on the flow of the interview and preferred interview language.

Results: Of the 232 professional Arabic-speaking healthcare interpreters interviewed 21% were assessed as having adequate skills in both Danish and Arabic, 40% were assessed as having inadequate skills in both languages. Only 6% of interpreters born in Denmark had adequate language skills in both languages.

Conclusions: A large proportion of Arabic-speaking healthcare interpreters appear to have inadequate language skills in Danish or Arabic or both. Interpreters born in Denmark do not appear to have better skills than those born elsewhere. There is an urgent need to screen interpreters to identify those who are unfit for healthcare interpretation. Those eligible should receive additional training, including technical language skills. All interpreters should be required to undergo testing of their linguistic skills to work professionally as healthcare interpreters.

P177 - Simulate anywhere - Design of simulation-based medical education and advantages and disadvantages of in situ simulation versus off-site simulation

Other

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Introduction/Purpose: Simulation-based medical education (SBME) has traditionally been conducted as off-site simulation (OSS) in simulation-centres. Some hospital departments also provide OSS using in-house training-room(s) set up away from the clinical setting, called in-house training. Introduced over the past decade is in situ simulation (ISS). ISS occurs in patient-care units in healthcare-professionals' own working environment. ISS can be announced or unannounced, the latter known as a drill. This review discusses the advantages and disadvantages of various simulation settings.

Methods: Approximately 130 original articles about ISS were identified, and among these two reviews and five original articles with a randomized or retrospective design comparing differences in simulation settings.

Results: Non-randomized studies argue that ISS is more effective. Conversely, the comparison-studies (randomized or retrospective), show that choice of setting does not seem to influence individual or team learning. However, hospital department-based simulations, such as in-house simulation and ISS, lead to a gain in organizational learning. Some improved organizational learning from unannounced ISS is described; but unannounced ISS was found more challenging to conduct and stressful among participants.

Conclusions: The physical setting of simulation does not seem to influence individual and team learning. Department-based local simulation, such as simulation in-house and especially ISS, leads to gains in organizational learning. The objectives of SBME and factors as feasibility can help determine choice of simulation setting. Take-home messages: Simulate anywhere. Choice of simulation settings does not influence individual and team learning, but ISS leads to gains in organizational learning.

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P178 - Simulation in obstetrics – a survey of practice in Denmark

Other

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Introduction/Purpose: The National Board of Health, Denmark recommends that all health-care providers regularly participate in obstetric simulation. A previous survey found that obstetric simulation was conducted in almost all departments in Denmark (2012). Settings were mainly in own department, not organized in a uniform way and there was a lack of evaluation. The purpose of this study was to obtain updated information about implementation of obstetric simulation, barriers and facilitating factors.

Methods: A questionnaire was e-mailed to all 22 obstetric departments. The questionnaire was semi-structured with yes/no questions, Likert scales and open-ended questions.

Results: 21/22 departments replied. All 21 departments conducted some obstetric multiprofessional simulation in the following topics (mentioned in order of frequency): Basic neonatal resuscitation(N=21), shoulder dystocia(N=21), postpartum bleeding(N=21), preeclampsia, vacuum extraction, breech delivery, prevention of perineal injury, perineal repair, emergency cesarean, maternal resuscitation, twin delivery, cord prolapse, fetal blood sampling, perimortem cesarean and amnion infusion. The data did not allow us to draw conclusions regarding the amount of training and evaluation. Open-ended questions revealed that barriers were: Economy, logistic challenges as planning and getting dedicated training-time, priorities of training versus clinical work and lack of support from managers. Facilitating factors were: Multi-professional management support, use of root cause analysis to identify topics and a research-based approach.

Conclusions: All except one Danish department reported that they conducted one or another kind of obstetric simulation. However, these self-reported data did not allow conclusions, and we were left with the impression of over-reporting. Future studies may imply interviews to get more accurate information.

A

A. Møller, Lars	O27, P149
Aabakke, Anna	P18
Aagaard Nøhr, Ellen	P75
Aagaard Petersen, Morten	P166
Aagaard, Jørn	O2
Aagaard, Sissel Kramer	P12
Aaltonen, Riikka	P157
Aarnio, Matti	P115
Aaskov, Camilla	P105
Acharya, Ganesh	P81, P91, P174
Aga, Monica	P154
Ahluwalia, Balpreet S.	P174
Ajne, Gunilla	P15
Al-Mukhtar Othman, Jwan	P153
Al-Zirqi, Iqbal	P35, P44
Albrechtsen, Charlotte Krebs	P172
Allin, Kristine	P27
Alrø Mardal, 4) Cecilie	P57
Alvestad, Melissa	P10
Amirian, Ilda	P57
Andersen, Camilla Byskou	O14
Andersen, Charlotte Sander	P34
Andersen, Lise Lotte Torvin	P79, P178
Andersen, Lærke Heidam Juul	P99
Andersen, Marianne Skovsager	O21
Andersson, Charlotte Brix	P178
Andreasen, Mette Findal	P12
Andræ, Frida	O33
Ankarcrona, Victoria	O49
Antonsen, Sofie Leisby	O6
Arendt, Linn Håkonsen	P82
Argyraki, Aikaterini	P42
Assing Hvidt, Elisabeth	P75
Athanasiou, Antonios	P157
Augustenas, Janina	P134

Aukia, Linda	O13
Aune, Guro	P110
Austad, Fride E.	O46
Auvinen, Juha	P54, P138
Axelsson, Paul	P32
Axelsson, Paul B.	P21
Axfors, Cathrine	P48, P49

B

B Thorsen, Poul	P28, P36
B. Thorsen, Poul	P67
Bach Elving, Lisbeth	P113
Bak Thorsen, Poul	P137
Bakker, Jannet	O47
Balasubramaniam, Kirubakaran	P117
Barbosa, Malou	P84, P145
Basnet, Purusotam	P81, P174
Bay, Bjørn	O3 , P100
Bek, Karl	P150
Bendix, Jane M.	P53, P77
Benediktsdottir, Sigurlaug	O48, O50
Bennich, Gitte Bennich	P111
Berg, Ann Hilde	O33
Berg, Inge	P64
Bergendahl, Sandra	O49
Bergesen, Lena Flekke	O40
Bergh, Christina	O4
Bergholt, Thomas	P21, P58, P74
Bernt Wulff, Camilla	P85
Bertelsen, Christine Buus	P37
Bhide, Amarnath	O36, P91
Biering-Sørensen, Fin	O26, P148
Bing, Mette Hornum	P148
Birukov, Anna	P87, P92
Bisgaard Pinborg, Anja	P39
Bixo, Marie	O33
Bjarnadóttir, Ragnheiður Inga	P65
Bjerkseter, Line	P10

Bjørge, Line	P81
Bjørk, Jonna	P144
Bjørkholt Andersen, Louise	P87, P92
Blaakaer, Jan	P164
Bladh, Marie	O18
Blanes-Vidal, Victoria	P69
Bodin, Charlotte Rosenkrantz	P85
Bogstad, Jeanette	P103
Boie, Sidsel	O47, O3, P76
Bonde, Lisbeth	O27, P149
Bonnichsen, Maja Lecic	P33
Bor, Pinar	O47, P12, P30, P76, P165
Borgfeldt, Christer	O6
Boris, Jane	P34
Borthen, Ingrid	P78
Botházi, Attila	P118
Boél Sigurdardóttir, Hrefna	P141
Braathen, Ingrid	P136
Breinegaard, Nina	O27
Brink, Lærke R.	P27
Brismar Wendel, Sophia	O49
Brogaard, Lise	O53, P41
Brooks, Lis	O48, O50
Bruhn, Peter James	O19
Brun Pedersen, Camilla	P18
Brunak, Søren	P58
Buchardi, Kristina	P164
Bukholm, Ida Rashida	P170
But, Anna	O42
Bø, Kari	P24
Bødker, Birgit	P53
Bødtker, Anne T.	P33
Bøgild, Henrik	P143
Bøttcher, Tove	P22
Bützow, Ralf	O8

C

C. Püschl, Ida	O27
----------------	-----

Carlsen, Sven Magnus	P38
Christensen, Karl Bang	P74
Christensen, Peter	P145
Christiansen, Ulla Juul	O38
Christophersen, Gro	O19
Clausen, Tine	P32
Clausen, Tine D.	P21
Clausen, Tine Dalsgaard	P13, P56
Cnattingius, Sven	O54
Crusell, Mie	P86
Crusell, Mie K. W.	P27
Cárdenas Hernández, Jovita	P157

D

Dalsgaard Clausen, Tine	P71
Daltveit, Anne Kjersti	P35, P44
Damkier, Per	P173
Damm, Peter	P27, P56, P79
Damsgaard Højsager, Katia	P132
Danielsson, Kim	P78
Danneskiold Lassen, Pernille	P111
Darj, Elisabeth	P5
De Graaf, Irene	O47
de Neergaard, Rosanna	O19
Dechend, Ralf	P87, P92
dePont Christensen, René	P117
Dieckmann, Peter	P177
Dillner, Joakim	O8
Donaldson, Callum John	P93
Dubey, Vishesh	P174
Due Buron, 3) Birgitte Marie	P57
Due, Ulla	O26
Dueholm, Margit	P114, P127, P135

E

Ebbehøj, Eva	P105
Ebbing, Cathrine	P94
Eckerdal, Patricia	P49

Edelstam, Greta	P128
Edwards, Hellen	P20
Egekvist, Anne Gisselmann	P119
Eggebø, Torbjørn M.	O46
Eggebø, Torbjørn Moe	O48, O50, P72
Einbeigi, Zakaria	O4
Ejg Jarbøl, Dorte	P117
Ekelund, Charlotte	P26, P106
Ekelund, Charlotte Kvist	P85
Ekelund, Kim	P172
Ekholm, Eeva	O32
Ekholm, Juha	O32
Ekman, Julie	O45
Ekselius, Lisa	P48, P49
El Issaoui, Meryam	P98
El-Sayed, Mohsen	P104, P116
El-Sayed, Mohsen Mahmoud	P93
Elise Holm-Larsen, Christina	O12
Ellilä, Pauliina	P121
Ellingsen, Liv	O15
Elmelund, Marlene	O26, P148
Elschot, Mattijs	P81
Emilsdottir, Arna Rut	O5
Emtell Iwarsson, Karin	P107
Engel, Susanne	O19
Engelbrechtsen, Line	P86
Engelbreedt, Katrine	P151
Engelsen, Ingeborg B	P136
Engelsen, Ingeborg Bøe	O40
Engvad, Birthe	P108
Eriksson, Johan	P4
Eriksson, Johan G	P29
Eriksson, Johan G.	P31
Eriksson, Olle	P125, P140
Eszter, Vanky	P170

F

Fagö-Olsen, Carsten Lindberg	P162
------------------------------	-------------

Falco, Letizia	O36
Faucher, Marie-Claude	P161
Faurby Maarup, Clara	P165
Fedder, Jens	O2, O1, P108
Fenger-Grøn, Jesper	P64
Findal Andreasen, Mette	P30
Findal, Gry	O30
Fink Topsøe, Märta	P42
Fonn, Marit Cecilie	P38
Forman, Axel	O38, P82, P119, P164
Forsell, Sabrina	P115
Foss, Lill Sofie	P130
Franks, Stephen	P54
Fredriksson, Andreas	O4
Friis Petersen, Jesper	P42

G

Galambosi, Päivi	P59
Gammeltoft, Tine	O17, O12, O11, P2, P109
Geirsson, Reynir Tomas	O5
Geirsson, Reynir Tómas	P24
Gemzell Danielsson, Kristina	O43
Gemzell-Danielsson, Kristina	P107
Ghi, Tullio	O48, O50
Gierman, Lobke	P81
Gilboe Lindorff-Larsen, Karen	P168
Gilhus, Nils Erik	P78
Gimbel, Helga	O27, P149
Giskeødegård, Guro F.	P101
Gislason, Gunnar	P149
Gissler, Mika	O31, O41, O42, O44, P31, P66, P146
Glavind, Julie	O47, P13, P17, P43, P76
Glavind, Karin	P143, P144 , P151
Glavind, Marianne	P84, P145
Glavind-Kristensen, Marianne	P150
Glazer-Livson, Sivan	P157
Gliese, Henrik	P41
Gommesen, Ditte	P147

Graumann, Ole	P119
Greisen, Susanne	P84, P150
Grindheim, Sindre	P94
Groen, Henk	P4
Grove-Laugesen, Diana	P105
Gundersen, Tina Djernis	P13, P56
Gybel-Brask, Dorte	P86
Gyhagen, Maria	O51, P142, P153
Gyrd-Hansen, Dorte	P158
Gögenur, Ismail	P123

H

Haahr, Thor	P118
Haapsamo, Mervi	O32
Hageman, Ida	P21
Hagemann, Cecilie Therese	P110
Hagmar, Magnus	P128
Halldorsson, Thorhallur Ingi	P24
Halonen, Pia	O41
Halttunen-Nieminen, Mervi	P115
Hanem, Liv Guro Engen	P38
Hansen, John	P95
Hansen, Margrethe	P141
Hansen, Rebecka	P39, P113
Hansen, Torben	P86
Hansen, Tue H.	P27
Hansen, Tue Haldor	P86
Hare, Kristine Juul	P99, P103
Harmsen, Lotte	O48, O50
Hartikainen, Anna-Liisa	O31
Hartvig †, Per	P140
Hassan Serry, Mohammad-Yaseen	P104, P116
Hasselrot, Klara	O39
Haugen, Guttorm	O30
Hedegaard, Morten	P58
Hegaard, Hanne K.	P77
Hegaard, Hanne Kristine	P60
Heikinheimo, Oskari	O41, O43, O42, O44, P126, P171

Heinävaara, Sirpa	P66
Helbig, Anne	O30
Helgadottir, Elisabet Arna	O5
Helleland, Live	O40
Hellgren, Charlotte	P48
Henriksen, Birgitte	P67
Henriksen, Tine Brink	P43, P60
Hermansson, Ruth	P160
Hesselman, Susanne	O49
Hestvold, Kristin	O33
Hildebrandt, Malene	O7
Hildingsson, Inger	P107
Hirschberg, Angelica	O33
Hjelle, Sissel	O33
Hoegdall, Estrid	P86
Hoegh, Stinne	P74
Hoei-Hansen, Christina Engel	P70
Hoek, Annemieke	P4
Hoffmann, Elise	P111 , P139
Hognert, Helena	O43
Holdø, Bjørn	P152
Holm, Charlotte	O52 , P39
Holm-Larsen, Christina Elise	O17
Holmberg, Erik	P11
Holst, Lone	P51
Holstad, Maria	P140
Hordnes, Knut	O40
Hoseth, Eva	O35
Hougård Nielsen, Julie	P87
Housseine, Natasha	O14
Huang, Hui-Yu	P133
Huang, Yi-Ting	P133
Humaidan, Peter	P102
Hummelshøj, Lone	P164
Huvinen, Emilia	P4, P29
Hvidman, Lone	O53, P37, P41, P51, P178
Hvidt, Niels Christian	P75

Härkki, Päivi	O42
Høgdaall, Claus	O6, P162
Høltzermann, Mette	P40
Høst Ramlau-Hansen, Cecilia	P100

I

Iachina, Maria	P163
Iben Marx, Charlotte	P113
Ibsen, Inge Olga	P173
Iftner, Thomas	O23
Ingerslev, Hans Jakob	P100
Ipsen, Sidsel Elisabeth Bøggild	P134
Itani, Nada	P176
Iversen, Ann-Charlotte	P81, P101
Iversen, Helene	P127, P135
Iversen, Johanne Kolvik	P72
Iversen, Maja Lundegaard	P114

J

J. Rogathi, Jane	O11
Jaakola, Anna	P161
Jacobsen, Anne Flem	P72
Jacquemyn, Yves	P3
Jakobsen, Janus Christian	P111
Jakobsson, Maija	O41, O8, P157
Jalanko, Eerika	O44
James, Diva	P155
Jar-Allah, Tagrid	P11
Jawad, Isabella	O33
Jensen, Boye	P83
Jensen, Boye L.	P92
Jensen, Dorte Møller	P56, P79
Jensen, Kristiane Roed	O53, P41
Jensen, Pernille	O7
Jensen, Pernille T.	P158
Jensen, Pernille Tine	P163, P166
Jenum, Pål	O30
Jeppesen, Sarah	P46

Joergensen, Jan Stener	P87, P92
Johansen, Marianne	P172
Johansen, Nanna Roed	P62
Johnson, Jonas	P91
Jokelainen, Jari	P54
Jonsdottir, Anna Margret	O5
Joronen, Kirsi	P157
Josefsson, Ann	O18
Järvelin, Marjo-Riitta	P54
Jøregensen, Henrik L.	P71
Jørgensen, Jan Stener	P69, P75
Jørgensen, Siv Lykke	P163, P166
Júlíusson, Pétur Benedikt	P38

K

K Møller, Jens	P28, P36
K. Møller, Jens	P67
Kafulafula, Ursula	P5
Kahrs, Birgitte Heiberg	O48, O50
Kaijomaa, Marja	O28
Kalliala, Ilkka	O8, P115, P157
Kalyan, Akshita	O29
Kamstrup Moser, Lærke	P73
Kantharooban Umachanger, Janani	P143
Karlsen, Henriette	P94
Karlsen, Kamilla Kannegård	P102
Karlsson, Hasse	O13
Karlsson, Linnea	O13
Karlström, Sofie	O49
Katanga, Johnson	O23
Kaur, Navneet	O25
Kautiainen, Hannu	P31
Keiding, Niels	P21
Kesmodel, Ulrik	P102
Kesmodel, Ulrik Schiøler	O3, O38, P60, P82
Kessing, Lars V.	P21
Kessler, Jørg	P94
Khalil, Mohammed	P28, P36, P50, P64, P67, P176

Kierkegaard, Ole	O53, P41
Kim, Hae Won	P169
Kirkegaard, Ida	P95
Kirss, Anne	P80
Kiserud, Torvid	O25, P154
Kitlen, Gitte	P83
Kiviharju, Mari	P157
Kjaer, Susanne	O23
Kjaer, Susanne Krüger	O21
Kjaer, Sussane	P159
Kjaergaard Christiansen, Pernille	P6
Kjaergaard, Niels	P151
Kjerstad, Karn Fjærtøft	P123
Kjerulff Madsen, Frederikke	O12
Kjær, Trine	P6
Kjærbye-Thygesen, 5) Anette	P57
Kjærbye-Thygesen, Anette	P62
Kjærgaard, Niels	P143
Kjøllesdal, Anne M.	P33
Kjølseth Møller, Jens	P50
Klarskov, Niels	O26, P148
Klungsoyr, Kari	O54
Knopp Andersen, Louise Amalie	P132
Knorr, Sine	P56
Knudsen, Ulla Breth	P83, P105 , P171
Koivisto, Mari	P121
Koivusalo, Saila	P4, P29
Kolding, Line	P90
Kolster, Dorthe	P168
Kolte, Astrid Marie	P98
Konge, Lars	P123, P137, P168, P177
Konings, Peter	O39
Kopp Kallner, Helena	O49, O39
Korjamo, Riina	P131
Korsholm, Malene	P158 , P163
Kousgaard, Sabrina	P144
Kramer Aagaard, Sissel	P30

Kramer, Michael	P16
Krebs, Lone	P13, P18, P46, P71, P178
Krebs, MD, DmSc, Lone	P45
Kroman, Mie Stougaard	P98
Kronborg, Camilla	P83
Kruse, Anne Raabjerg	O38, P82
Kvalvik, Liv Grimstvedt	O54
Kyng, Morten	P51
Kyrgiou, Maria	P115, P157
Källén, Karin	P96
Kärrberg, Cecilia	P11

L

L. Fosbøl, Emil	P149
Lahesmaa-Korpinen, Anna-Maria	O31
Laine, Merja K.	P31
Laitinen, Leena	P131
Laitinen, Linda	P121
Landersø, Selma Kløve	P98
Langebrette, Anton	O37
Langhoff-Roos, Jens	O52, P20, P39, P70
Larsen, Agnete	P12, P30
Larsudd-Kåverud, Jennie	P142
Lassus, Heini	O42
Lauenborg, Jeannet	P20, P27
Lauren, Laura	P80
Laursen, Bjarne	P70
Laursen, Jens Ole	P22
Lauszus, Finn Friis	O38, P82
Leandersson, Pia	O6
LeBlanc, Vicki	P172, P177
Led Sørensen, Jette	P168
Lees, Christoph C	O48, O50
Leeson, Simon	P115
Lehtoranta, Lara	O32
Leijonhufvud, Åsa	O49
Lenz, Suzan	P135
Leonard, Samantha	O29

Leppälahti, Suvi	O44
Lesnikova, Iana	P12, P30
Leth Løkkegaard, Ellen	P42
Li, Yat Wah	P55
Li, Yi-Chieh	P133
Lidegaard, Ojvind	O43
Lidegaard, Øjvind	P120
Lieng, Marit	P170
Lilliecreutz, Caroline	O18
Linde, Ditte Søndergaard	O21
Lindeberg, Mia	O39
Lindh, Ingela	O43
Lindström, Annika	P160
Lindström, Katarina	P15
Lindtjørn, Elsa	O48, O50
Lohi, Jouko	O16
Lommi, Markus	P138
Lorincz, Attila	O8
Lose, Gunnar	P141
Loukovaara, Mikko	O16
Louvanto, Karolina	O8 , P157, P161
Lovvik, Tone S	P61
Lund, Ken	P163
Luukkaala, Tiina	P25
Lykke Thomsen, Lars	P39
Lynge, Elsebeth	P156
Lyngsø, Charlotte Egholm	P34
Lyngsø, Julie	P100
Långström, Bengt	P140
Løkkegaard, Ellen	P32
Løkkegaard, Ellen C. L.	P53, P77
Løkkegaard, Ellen C.L.	P21
Løkkegaard, Ellen Christine Leth	P13, P56
Lønnebotn, Marianne	O33, P94
Løvvik, Tone	O33 , P94

M

Maaløe, Nanna	O14
---------------	------------

Madanat-Harjuoja, Laura	P66
Madsen, Caroline	O35
Madsen, Frederikke Kjerulff	O17
Mahendran, Yuvaraj	P86
Majeed, Huda	P118
Makdessi, Lollo	P128
Maksimovic, Milica	P103
Malila, Nea	P66
Malmström, Ola	P52
Manongi, Rachael	O11
Manongi, Rachel	O17, O12, O21, O23, P2
Manongi, Raheli	P159
Manser, Tanja	O53, P41
Mantzius, Julie	P1, P8
Marcussen, Mette	P143
Marcussen, Niels	P108
Marinovskij, Edvard	P119
Markauskas, Algirdas	P162
Markova, Veronika	P39
Maro, Eusebious	P1, P8
Marteinsdottir, Ina	P140
Martikainen, Hannu	P138
Masalin, Senja	P31
Masenga, Gileard	O20 , P7, P9 , P155
Mathiesen, Elisabeth R.	P56, P79
Matthesen, Terese Matthesen	P120
Mchome, Bariki	P159
McNeill, Gabriel	O29
Meguid, Tarek	O14
Mehta, Dalip Singh	P174
Melin, Johanna	P66
Membe-Gadama, Gladys	P5
Meng, Ling	O29
Mentula, Maarit	P146
Meyrowitsch, Dan	P2
Meyrowitsch, Dan Wolf	O17
Mikkelsen, Susanne N.	P53

Mikkelsen, Thea Falkenberg	P72
Mikkola, Tomi	P146
Milidou, Ioanna	P43
Milsom, Ian	O51, O43, P152, P153
Missmer, Stacey A.	P164
Moberg, Christian	P128
Moen, Mette	P170
Mogensen, Ole	O7, P102, P158, P166
Mol, Ben	O47
Mol, Ben Willem	P4
Molin, Johanna	O33
Morin-Papunen, Laure	P54
Morken, Nils-Halvdan	O34, O54, P16, P52 , P78
Mortensen, PhD, Laust Hvas	P45
Mosgaard, Berit Jul	P162
Moss, Esther	P115
Mrema, Dorah	P1, P8
Mundal, Siv Boon	P81
Musaeus, Peter	O53
Mushi, Declare	O17, O12, O11
Mwaiselage, Julius	O23, P159
Mwaiselage, Julius Douglas	O21
Mylius Rasmussen, Mikkel	P85
Myntti, Tarja	P59
Männistö, Tuija	O31
Möller, Louise	O18
Mølgaard, Henning	P95
Møller Bek, Karl	P84
Møller-Skuldbøl, Inge Marie	P168

N

Nadimi, Esmaeil S.	P69
Nadjai, Belinda	O8
Naessén, Tord	P140
Naver, Klara	P139
Nayahangan, Leizl Joy	P168
Neumann, Gudrun	P167
Nevalainen, Jaana	P54

Ngo Van, Toan	P109
Nguyen Hoang, Thanh	P109
Nguyen Thi Thuy, Hanh	P109
Nguyen, Tanh	P2
Nielsen, Anders Bo	P137
Nielsen, Anna Pors	P58
Nielsen, Bjørn Ulrik	P168
Nielsen, Henriette Svarre	P98, P99
Nielsen, Kamilla Gerhard	P22
Nielsen, Lars H	P120
Nielsen, Lise Hald	P83
Nielsen, Pernille Nathalie	P2
Nielsen, Trine	P27
Nielsen, Trine Muhs	P43
Nieminen, Pekka	O8, P115, P157
Niinimäki, Jaakko	P138
Nilas, Lisbeth	P62, P113
Nilsson, Ida	O51 , P142, P153
Nimrody Sigalla, Geoffrey	O12
Noer, Mette Calundann	O6
Nohr, Ellen Aagaard	P173
Nordengen, Eirik	P110
Norman, Harriet	P104
Normann, Anne Katrine	P64
Nurmi, Miina	P121
Nybo Andersen, Anne-Marie	P100
Nyfløt, Lill Trine	O15
Næser, Vibeke	O19
Nøhr, Ellen Aagaard	P60
Nøhr, Ellen Aagard	P147
Nørskov, Cathrine Lautrup	P22

O

Oddgeirsdóttir, Hanna Lilja	P65
Odland, Jon Øyvind	P5
Odland, Maria Lisa	P5
Oksjoki, Sanna	P157
Ole Mogensen, Ole	P163

Olesen, Peter Grøning	O38
Ollila, Meri-Maija	P54
Olofsson, Per	P96
Olovsson, Matts	P128, P160
Olsson, Ulf	P140
Oren Gradel, Kim	P141
Othman, Jwan	O51, P142
Otkjær, Astrid M.	P71
Ottesen, Bent	O27, P149, P172, P177
Ovesen, Per	P83

P

Paavonen, E. Juulia	O13
Paavonen, Jorma	O16, O28
Painter, Rebecca	P4
Palmø, Jan	P103
Palo, Pertti	O32
Paltved, Charlotte	P168
Parmar, Sheetal	O29
Paulsen, Torbjørn	O6
Pedersen, Berit Woetman	P172
Pedersen, Berit Woetmann	P26
Pedersen, Claus Duedal	P69
Pedersen, Katrine Dahl	P150
Pedersen, Lars H.	P90
Pedersen, Lars Henning Pedersen	O35
Pedersen, Oluf	P27
Pekkola, Maria	O16
Pembe, Andrea	O23
Petersen, Anne H.	P21
Petersen, Jesper F.	P53
Petersen, Lone	P165
Petersen, Olav B.	P90
Petersen, Olav Bjørn	O35, P51 , P85
Petersen, Paul Michael	P42
Peto Lagin, Stivani	P118
Piltonen, Terhi	P54
Pinborg, Anja	P21, P103

Pinborg, Anja Bisgaard	P106
Pohjoranta, Elina	P126
Polo-Kantola, Päivi	O13, P121
Popova, Daria	P174
Poromaa, Inger	O33
Poulsen, Bente Bækholm	P129 , P137
Prætorius, Lisbeth	P103
Pukkala, Eero	O41, O42
Puukka, Katri	P54

Q

Qvigstad, Erik	O37
Qvist, Niels	P147

R

Rackauskaite, Gija	P70
Rahkola-Soisalo, Päivi	O28, P146
Raina, Marko	P31
Ramklint, Mia	P49
Ranker, Johanne	P81
Rasanen, Juha	P91
Rasch, Vibeke	O17, O12, O21, O20, O11, O23, P1 , P2, P7, P8, P9, P109 , P147, P155, P159
Rasmussen, Anne Mette Odgaard	P120
Rasmussen, Ole Bredahl	P34
Rasmussen, Steen	P21
Rasmussen, Steen C.	P71
Rasmussen, Steen Christian	P13
Rathjen, Kira Thissenius	P22
Rausgaard, Nete Lundager Klokke	P173
Rautava, Päivi	P121
Ravlo, Merethe	P170
Ravn, Pernille	P102, P117, P173
Real, Francisco	P94
Real, Fransico	O33
Redman, Charles	P115
Reijonen, Johanna	P25
Rex, Anne Sofie	O2

Rifbjerg Larsen, Christian	P111
Riishede, Iben	P26, P106
Ringdal, Emilie K	O25
Ringholm, Lene	P79
Rinnan, Karen Jakobsen	O40
Risager, Johanne	P17
Riska, Annika	O41
Ristorp Andersen, Betina	P53
Rivers, Elizabeth	O29
Rode, Line	P26
Rogathi, Jane	O12
Rogathi, Jane Januarius	O17
Roger, Michel	P161
Rohi Khalil, Mohammed	P73
Roland, MArise Cecilie P.	P33
Romero, Stefhane	P15
Romundstad, Pål	O50
Roneklindt, Axelina	P46
Rono, Kristiina	P4
Roos, Nathalie	P61
Roos, Piret	P80
Rosbach, Hanne	O35
Roseboom, Tessa	P4
Rosenberg, Emma	O4
Rosenberg, Margit	P33
Rossen, Janne	O46
Rosthøj, Susanne	O6, P172
Rothmann, Mette	P6
Rudnicki, Martin	P129
Rull, Kristiina	P80
Ruokonen, Aimo	P54
Ryan, Allison	O29
Rönö, Kristiina	P31
Rørbye, 2) Christina	P57
Rørbye, Christina	P62

S

Saavalainen, Liisu	O42
--------------------	------------

Salvesen, Kjell Åsmund	O48, O50
Salvesen, Øyvind	O33, P16, P38
Sandager, Puk	P90
Sande, Anne Kvie	O34
Sande, Ragnar Kvie	O34
Sarkola, Taisto	P4
Savarimuthu, Thiusius	O7
Savran, Mona M.	P137
Schiøler Kesmodel, Ulrik	P23, P100
Schledermann, Doris	O7, P167
Schnack, Tine Henrichsen	P164
Schnurr, Theresia	P86
Schroll, Jeppe	P124
Schrøder, Katja	P75
Scott, Hannah	O10
Seija, Grenman	P161
Seikku, Laura	P59
Sejersbøl, Signe Havskov	P34
Sengpiel, Verena	P11
Sequeira Campos, Miguel	P93
Seyer-Hansen, Mikkel	P119
Shayo, Benjamin	O20, P7 , P9, P155
Sigalla, Geoffrey	O11
Sigalla, Geoffrey Nimrod	O17
Sigurdardottir, Thorgerdur	P24
Silva, Gabriela	P81
Simonsen, Sara Bønløkke	P175
Singh, Manpreet	P55
Skalkidou, Alkistis	P48, P49
Skibsted, Lillian	P86
Skjaerven, Rolv	O54
Skjeldestad, Finn Egil	O45 , O43, O9 , O24 , P152
Skjøt-Arkil, Helene	P22
Skjøth, Mette Maria	P6
Skoog Svanberg, Agneta	P48
Skorstengaard, Malene	P156
Skovbjerg, Ellen	P1, P8

Skovsager Andersen, Marianne	P92
Skråstad, Ragnhild Bergene	P16
Skulstad, Svein Magne	P94
Slang Stauri, Elisabeth	P112
Slettebak, Marthe	O9
Sodemann, Morten	P176
Sorbye, Linn Marie	O54
Sperling, Lene	P2
Spira, Jack	P128
Sponholtz, Sara	O7
Stach-Lempinen, Beata	P29
Staff, Anne Cathrine	O37
Stefanovic, Vedran	O16, O28, P59
Steffensen, Berglind	O33
Steiner, Pernille Husted	P134
Steingrimsdottir, Thora	O5, P24, P171
Stener Jørgensen, Finn	O35
Stentebjerg, Maria	P165
Stephansson, Olof	P61
Stokkeland, Live Marie T.	P101
Storkholm, Marie	P150
Strandell, Annika	O4, P11
Strander, Björn	P11
Stray-Pedersen, Babill	O30
Stridsklev, Solhild	P101
Suhonen, Satu	P126
Sundström Poromaa, Inger	P49
Sundström-Poromaa, Inger	P48, P61
Sundtoft, Iben Blaabjerg	P82
Suvanto, Eila	O31
Svare, Jens Anton	P20
Svarrer, Rebekka Oxenvad	P171
Sven, Carlsen	O33
Svenningsen, Rune	O37, P152
Swai, Patricia	O22, P159
Sydjsö, Gunilla	O18
Syed, Rifat	P104, P116

Syrjänen, Kari	P161
Syrjänen, Stina	P161
Søgaard, Charlotte Hasselholt	P162
Søgaard, Kirsten	O35
Søgaard-Andersen, Erik	P162
Søndergaard, Ditte	O23
Søndergaard, Jens	P117
Sørbye, Sveinung Wergeland	O9, O24
Sørensen, Bjarke	P1, P8
Sørensen, Jette Led	P74, P172, P177, P178

T

Tabor, Ann	P26, P85, P106
Tainio, Karoliina	O8, P157
Tapanainen, Juha	P54
Teigen, Per Kristen	P112
Terp, Helene	P64, P134
Thamsborg, Lise Holst	P156
Thellesen, Line	P74, P178
Thinggaard, Ebbe	P123
Thisted, MD, Dorthe Louise Ahrenkiel	P45
Thomsen, Lars L	O52
Thomsen, Line Holdgaard	P164
Thomsen, Liv Cecilie Vesterheim	P81
Thorarinsdottir, Solveig	O33
Thornhill, Heidi F	O25, P154
Thornton, Jim	O47
Thorsen, Poul Bak	P50
Thorsen-Meyer, Hans-Christian	P58
Tiblad, Eleonor	P85
Tihtonen, Kati	P25
Tiitinen, Aila	O42, P66
Tikkanen, Minna	O16, O28
Tikkinen, Kari AO	P157
Torkildsen, Erik Andreas	O48, O34, O50
Torp-Pedersen, Christian	P149
Tran Tho, Nhi	P109

Tropé, Ameli	P115
Trouva, Anastasia	O33
Trovik, Jone	O25 , O40, P130 , P136 , P154 , P171
Tulokas, Sari	P146
Turunen, Suvi	O31
Tverelv, Liv Reidun	O24
Tähtinen, Riikka	P157

U

Uimari, Outi	P138
Ulander, Veli-Matti	P59
Uldall, Peter	P70
Uldbjerg, Niels	O47, O53, P12, P17, P28, P30, P36, P37, P41, P50, P67, P76, P82, P90, P95, P171
Ulriksen Draborg, Eva	P6
Underdal, Maria	O33
Uotila, Jukka	P25
Urbute, Aivara	P23
Usman, Sana	O48, O50

V

Vaage, Marte Øye	P38
Valgeirsdottir, Heiddis	P61
van Dammen, Lotte	P4
van de Beek, Corneliëke	P4
van Roosmalen, Jos	O14
Vangen, Siri	O15, P35, P44
Vanky, Eszter	O33, P16, P38, P61, P94, P101
Veddeng, Anne	P130
Velle-Forbord, Veronica	P16
Velu, Adeleine	O47
Verelst, Margareta	P152
Vestergaard, Anna Louise	P12, P30
Vestergaard, Henrik	P86
Vestgaard, Marianne	P79
Vinter, Christina Anne	P6
Virtanen, Seppo	P157
Vittinghus, Erik	P83

Vleuten, Cees Van der	P172, P177
Vogel, Ida	P85
Volqvartz, Tabia	P12, P30
Vu, Phikhanh	O29
Vuolteenaho, Olli	O32
Vääräsmäki, Marja	O31
W	
W. Meyrowitsch, Dan	O11, P109
Waldstrom, Marianne	O23
Waldstrøm, Marianne	O1
Wall, Anders	P140
Wang, Chin-Jung	P133
Weile, Louise Katrine Kjær	P60
Wekker, Vincent	P4
West, Sammeli	P54
Westbom, Lena	P85
Westgren, Magnus	P15
Westh, Henrik	P62
Wielandt, Hanne Benedicte	P132
Wiik, Johanna	P11
Wikkelsø, Anne Juul	P20
Wikström, Anna-Karin	O54, P48, P49, P61
Winther, Azalie	P32
Wolf Meyrowitsch, Dan	O12
Wrønding, Tine	P42
Wu, Chun Sen	O23
Wu, Chunsen	O2, P2, P60, P158, P159, P163, P166
Wulff, Camilla Bernt	P106
Y	
Yli, Branca	O15
Youssef, Aly	O48, O50
Z	
Zabielska, Renata	O33
Zaigham, Mehreen	P96
Zedeler, Anne	P103

Zingenberg, Helle	O35
Zizzo, Anne Rahbek	P95
Zwinderman, Aeilko	P4
Á	
Ásbjörnsdóttir, Björg	P79
Ä	
Äyräs, Outi	O28
Å	
Ågren, Hans	P140
Åkervall, Sigvard	O51, P142, P153
Ø	
Ødegård, Rønnaug	P38
Øian, Pål	O15
Ørnskov, Dorthe	O1
Østborg, Tilde Broch	O48, O50
Østergaard, Doris	P172, P177
Østergaard, Lauge	P149