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Title: Use and risks of prescription drugs during pregnancy, with special emphasis on selective serotonin reuptake inhibitors and valproic acid.

Link to full text: <http://ethesis.helsinki.fi/>

Abstract

Firstly, the overall use of prescription drugs, and secondly, the use of prescription drugs suspected or known to be harmful to the fetus were investigated in pregnant women during different pregnancy trimesters, and in matched non-pregnant controls (n=43 470 each). Thirdly, the safety of SSRIs was evaluated by comparing women with SSRI purchases with matched pregnant controls without drug purchases (n=1782 each), and also by comparing women with SSRI purchases in different trimesters. Data for these three studies were derived from nationwide registers. Fourthly, the aetiology of multiple malformations was investigated by clinical evaluation and review of medical records of three sets of siblings, all exposed to valproate *in utero*, and their parents.

Prescription drugs were purchased by 46.2% of pregnant women, compared with 55.2% of non-pregnant controls. Drug treatment for chronic illnesses requiring treatment continued throughout pregnancy. In the second study, *potentially* or *clearly* harmful drugs were used less frequently in the first trimester than in the preconception period. In the third study, first trimester exposure to SSRIs (n = 1398) was not associated with an increased risk of major malformations (adjusted OR 1.0, 95% CI 0.6-1.7). Admission to special or intensive care unit was more common in neonates exposed to SSRIs during the third trimester than in those exposed only during the first trimester (15.7% vs. 11.2%; adjusted OR 1.6, 95% CI 1.1-2.2). In the fourth study, all three sets of siblings

exposed to valproate *in utero* had developmental delay, a distinctive facial appearance and other malformations characteristic of valproate embryopathy.

The results of prescription drug use are in line with rational drug use during pregnancy. Due to the relatively common occurrence of neonatal problems, SSRI drugs during pregnancy should only be used when clearly indicated. The observed valproate embryopathy in all siblings in the three families strongly suggests hereditary susceptibility to valproate-induced teratogenicity as, in general, the majority of children are born healthy.

Disputation 20.12. 2005 University of Helsinki

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**USE AND RISKS OF PRESCRIPTION DRUGS DURING
PREGNANCY
WITH SPECIAL EMPHASIS ON SELECTIVE SEROTONIN REUPTAKE
INHIBITORS AND VALPROIC ACID**

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ACADEMIC DISSERTATION

To be presented, with the permission of the Medical Faculty of the University of Helsinki, for public examination in Auditorium 3 of Biomedicum on December 20th, 2005, at 12 noon.

Helsinki 2005