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OVARIAN CANCER MARKER HE4
IN HORMONE-RELATED GYNECOLOGICAL
CONDITIONS AND DIAGNOSIS OF OVARIAN
GRANULOSA CELL TUMORS

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ABSTRACT

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Ovarian cancer marker HE4 in hormone-related gynecological conditions and diagnosis of ovarian granulosa cell tumors

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Ovarian cancer is commonly diagnosed at an advanced stage as the early stages are symptom-free. Despite of development in the fields of surgery and chemotherapy, the prognosis remains poor. In order to improve the diagnostic methods, research on biomarkers such as HE4 (Human epididymis protein 4) is actively ongoing. According to previous studies, HE4 is sensitive in detecting even early stages of epithelial ovarian cancer, yet its specificity needs further studies.

Altogether 359 women were included in this study. The aim was to evaluate the performance of serum tumor marker HE4 in benign gynecological conditions and determine confounding factors in the interpretation of marker analysis. The usability of epithelial ovarian cancer markers HE4 and CA125 in comparison with inhibin B and AMH were evaluated in the diagnosis and follow-up of ovarian granulosa cell tumors.

HE4 serum concentration was not significantly dependent of hormonal factors, which simplifies the interpretation of serum HE4 assays particularly in women of fertile age. In tubal pregnancies we detected elevated serum HE4 concentrations, and the tubal epithelium showed more intense and continuous immunohistochemical HE4 staining than normal fallopian tubes.

Combining HE4 with CA125 improves accuracy in ovarian cancer diagnostics. However, normal serum levels of these epithelial ovarian cancer markers do not exclude other ovarian cancer subtypes, which must be kept in mind particularly in premenopausal women. The best serum marker for the diagnosis and follow-up of ovarian granulosa cell tumors is inhibin B, yet its accuracy can be further improved by combining AMH to the analysis.

Keywords: HE4, serum marker, differential diagnosis, CA125, ovarian cancer