**11.Predictive factors of endometriosis progression into ovarian cancer**

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Abstract

Background: In recent years, the endometriosis has overcome a noteworthy renaissance in the recognition of its potential. In certain patients, a demonstrable malignant progression of ectopic foci leading to development of ovarian cancer is seen. The knowledge of endometriosis overthrow background into endometriosis associated ovarian cancer is of paramount importance for selection of patients at risk. The goal of the presented study was to review a malignant potential of the endometriosis and to specify predictive factors of endometriosis progression into ovarian cancer. Altogether 189 patients were included in the study. Conventional cytogenetics as well as measurement of transcriptional activity of CTNNB1 (β- catenin) and HIF1A (HIF1-α) genes were prospectively studied in 60 endometriosis patients and 50 control group patients. The retrospective histopathological analysis was performed in 19 endometriosis associated ovarian cancer patients and 60 patients with histologically confirmed endometriosis.

Results: Five endometriosis patients showed a deviation from normal cytogenetics finding without affecting of their phenotype. In 6 cases of endometriosis associated ovarian cancer ectopic endometrium was not confirmed. The remaining 13 cases demonstrated either benign or atypical endometriosis or even structures of borderline carcinoma. Atypical endometriosis was histologically confirmed in 20% of 60 endometriosis patients. Determination of gene expression (CTNNB1, HIF1A) formed two subgroups. Transcriptionally incipient endometriosis subgroup with insignificant genes expression compared to control group. In transcriptionally evident endometriosis subgroup were genes expressions significantly higher compared to control group (p < 0.01) as well as transcriptionally incipient endometriosis subgroup (p < 0.05).

Conclusions: Significant structural abnormalities of chromosomes are not included in genetic rigging of endometriosis patients. Atypical endometriosis represents a histopathologically detectable intermediate of endometriosis progression. Determination of genes expression CTNNB1 and HIF1A helps to allocate risk patients with endometriosis where more precise management is needed.

Keywords: Atypical endometriosis; CTNNB1; Conventional cytogenetics; Endometriosis; Endometriosis associated ovarian cancer; HIF1A.