

## **P266. Novel diagnostic models for endometriosis including serum CA-125 levels, body mass index, cyst pathology, dysmenorrhea or dyspareunia**

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**Context:** Diagnostic models for endometriosis based on serum biomarkers and patient's clinical data.

**Objective:** To evaluate the diagnostic potential of preoperative serum levels of CA-125 and HE4 in patients with endometriosis-like symptoms, and to construct diagnostic models with potential clinical applicability.

**Methods:** Preoperative serum levels of CA-125 and HE4 were evaluated using specific electrochemiluminescent assays. Logistic regression was used to construct diagnostic models with optimal diagnostic accuracy based on serum levels of CA-125 and HE4 and clinical data.

**Patients:** In total 221 patients (124 endometriosis patients; 97 control patients) from University Medical Centre Ljubljana, Slovenia and Medical University Vienna, Austria.

**Interventions:** Collection of serum samples and clinical data from women undergoing laparoscopy or laparotomy.

**Main Outcome Measures:** Serum levels of CA-125, body mass index, information on cysts and dyspareunia or dysmenorrhea.

**Results:** CA-125 levels were significantly elevated in endometriosis patients compared to control patients ( $p = 1.3 \times 10^{-10}$ ), while the difference in HE4 levels did not reach significance ( $p > 0.05$ ). The most important confounding variables were body mass index (BMI) and binominal variables, as the presence/absence of cysts, presence/absence of dyspareunia, and score for dysmenorrhea. A model with CA-125, BMI, information on cysts and dyspareunia separated patients from controls with sensitivity of 74.0%, specificity of 81.3% and an AUC of 0.836. The second model included CA-125, BMI, information on cysts and dysmenorrhea and had similar diagnostic accuracy with sensitivity of 74.8%, specificity of 79.2% and AUC of 0.819.

**Conclusions:** The constructed models have the potential for noninvasive diagnosis of endometriosis, and might be translated into clinical practice after additional validation.

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