Pro-inflammatory cytokines for evaluation of inflammatory status in endometriosis

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Context: Endometriosis is a pelvic inflammatory condition with a prevalence of about 5-10% in the general population, but in women with pelvic pain, infertility, or both, the prevalence is 35-50%. At this moment there is a serious difficulty in understanding the pathogenesis of this disease, and in non-surgical diagnosis of it. Objective: The aim of the study was to investigate the serum pro-inflammatory cytokine profile in patients with diagnosed endometriosis. Patients: The study included 160 women, who were divided in two study groups (Group I - endometriosis; Group 2 - healthy women). Intervention: We evaluated the serum levels of interleukin (IL)-1ß, IL-5, IL-6, IL-7, IL-12, and of tumor necrosis factor (TNF)-a with the use of Human Multiplex Cytokine Panels. Results: The serum level of IL-1ß, IL-6 and TNF-a is significantly higher in women with endometriosis compared to women free of disease from the control group (mean 10.777, 183.027, and 131.326 respectively, compared to 3.039, 70.043, and 75.285 respectively; p=0.002, p<0.001, and p=0.015, respectively). No significant differences in the serum levels of IL-5 and IL-12 was observed between the studied groups and IL-7 had a very low detection rate. Conclusions: Women with have elevated levels of the key pro-inflammatory cytokines, i.e. IL-1ß, IL-6 and TNF-a. At the same time, IL-1ß and IL-6 could be used as a predictor for endometriosis.