Title: Peritoneal fluid interleukin (IL-8) in patients with endometriosis - Is there a co-relation with severity or symptoms of disease?
Objective: IL-8 is a soluble chemokine with angiogenic and chemoattractant properties and is reported to be involved in pathogenesis of endometriosis. Our objective was to 1) evaluate and compare the peritoneal fluid levels of IL-8 in patients with endometriosis and in the control group of patients undergoing tubal ligation, 2) correlate IL-8 levels with stage of disease, and 3) investigate IL-8 levels as a marker for infertility or chronic pelvic pain.

Design: Prospective case control study

Materials and Methods: Peritoneal fluid was obtained from 86 patients undergoing laparoscopy for infertility, chronic pelvic pain or tubal ligation. Patients with endometriosis who had received prior hormonal or surgical treatment were excluded from the study. Peritoneal fluid samples were collected in the follicular phase after placing the second port prior to any manipulation. Care was taken at introducing the ports to avoid bleeding, and peritoneal fluid samples which were blood stained were excluded for analysis. IL-8 levels were determined using enzyme linked immunosorbent assay. Levels of IL-8 were compared between cases and controls using Wilcoxon rank sum test. A p value less than 0.05 was considered statistically significant.

Results: Fifty eight cases with histologically proven endometriosis and 28 controls undergoing tubal ligation were included in the study. Among those with endometriosis, 35 had peritoneal disease and 23 ovarian endometriomas. 18 women had early disease (stage I and II) and 40 advanced diseases (stage III and IV) classified according to the revised ASRM staging. Both cases and controls were matched for age and BMI. IL-8 levels were significantly higher in women with endometriosis (46pg/mL (11-697) versus controls (15.3pg/m (4-72); p <.0001). Significantly higher IL-8 Levels were demonstrated in patients with advanced peritoneal disease (155 pg/m (25-697) versus early stage disease (29.5 pg/ml (11-100); p < .0005). Levels of IL-8 were significantly lower in patients with ovarian endometrioma (32pg/mL(11-202) as versus implants (68 pg/mL(11-697); p=.024). There was no correlation of symptoms including infertility or chronic pelvic pain with levels of IL-8.

Conclusions: Higher levels of interleukin-8 in advanced stage disease indicate that it stimulates the disease in a dose dependent manner. Peritoneal fluid IL-8 is not a marker for either infertility or chronic pelvic pain associated with endometriosis.
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