ASSESSMENT OF LEPTIN LEVELS IN THE PERITONEAL FLUID OF PATIENTS WITH PELVIC ENDOMETRIOSIS AND IDIOPATHIC INFERTILITY

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Objective: Pelvic endometriosis is an immune-related chronic inflammatory disease with increased secretion of proinflammatory cytokines and neoangiogenesis. Leptin, the adipocyte-derived hormone, has been shown to have a role in food intake, basal metabolism, and reproductive function. Leptin levels are dynamically regulated, being elevated by inflammatory mediators and reduced by starvation. Leptin can influence the proinflammatory immune responses of CD4+ T lymphocytes, and reports have also shown this hormone to be an angiogenic factor in vitro and in vivo. The objective of this study was to evaluate the peritoneal fluid (PF) levels of leptin in patients with endometriosis and idiopathic infertility and compare it to a control group of tubal ligation/reanastomosis patients.

Design: Prospective controlled study

Materials/Methods: Peritoneal fluid (PF) from 91 women were obtained while they underwent laparoscopy for pain, infertility, tubal ligation or sterilization reversal. We measured the concentration of leptin in the peritoneal fluid (PF) and compared the levels among women, who were divided into groups according to their postsurgical diagnosis. Fifty-six patients were diagnosed with endometriosis, 8 with idiopathic infertility and 27 had undergone tubal ligation or reanastomosis (control group).

Results: Peritoneal fluid leptin was significantly higher in endometriosis 14.62 ± 9.79 ng/mL compared to idiopathic infertility 0.92 ± 1.57 ng/mL (P = 0.0007) and to controls 0.78 ± 1.94 ng/mL (p < 0.0001). Leptin levels were positively correlated with the stage of the disease in endometriosis patients (r = 0.4538; p = 0.03), and with pelvic pain in endometriosis patients (r = 0.4918; p = 0.001).

Conclusions: Higher levels of leptin were observed in the PF of endometriosis as compared to non endometriosis. These data suggest that the proinflammatory and neoangiogenic actions of leptin may contribute to the pathogenesis of endometriosis.

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