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INTRODUCTION

Study question:

To study the expression of IL-2 in the tissue of the pelvic peritoneal adhesions of various origins in women of reproductive age.

Summary answer:

Morphological examination and immunohistochemical study of the pelvic peritoneal adhesions revealed differences in the expression of cytokine IL-2 depending on the genesis.

What is known already:

One of the reasons identifies the high frequency of adhesion formation is the presence of inflammation in the abdominal cavity with different severity and origin. Activation of intercellular relationships in the peritoneum becomes promoter of further adhesions when inflammation. It is known that IL-2 is a basic proinflammatory cytokine that influences on the differentiation and specialization of T and B lymphocytes, stimulating natural killer cells and macrophages. Data on expression of IL-2 in the pelvic peritoneal adhesions in connection with their prescription, localization and origin is absent at accessible literature.

MAIN RESULTS

Study design, size, duration:

One hundred infertile women (aged 19-49 yrs) with pelvic peritoneal adhesions, who were underwent operative laparoscopy. 38 patients with a history of chronic inflammatory diseases of pelvic organs; 32 patients with endometrial disease (12 patients with endometrioma and 20 patients with external peritoneal endometriosis) and 30 patients who had undergone previous surgery for pelvic and abdominal cavity took part in this study.

Participants/materials, setting, methods:

The material for this study was the fragments of surgical material (adhesions and their parts) n=100, taken from the women of reproductive age who suffered with infertility during operative laparoscopy. The morphological and immunohistochemical study of adhesions were carried out by standard techniques using paraffin blocks, reagents of Dako and monoclonal antibodies to IL-2 (Anti-IL-2 antibody (ab6672)) of Abcam with automatic coloring Dako Cytomation.

Main results and the role of chance:

Immunohistochemical study of tissue adhesions obtained from the women who underwent surgeries on the pelvic organs, the expression of IL-2 was extremely low and was equal to 13±0,4 points. Only a few positively stained cells were found in the vessels lumen or perivascular space. During the immunohistochemical study of adhesions in women with a history of inflammatory diseases of the pelvic organs, there was a low IL-2 also, i.e. it was 19±0,5 points. Positive staining was detected mainly in the lymphocytes' cytoplasm, which perivascular located and areolar tissue. Immunohistochemical study of adhesions in patients with external genital endometriosis carried out in the first phase of the cycle was characterized by a moderate expression of IL-2 in the mesothelial cells and lymphocytic-macrophage aggregates. Expression of IL-2 was 111±0,3 points.

CONCLUSION

Limitations, reasons for caution: Age limitation, only women aged 19-49 yrs took part in this study. Exclusion criteria were the following for the groups: acute gynecological diseases, malignant diseases of female genitalia and ovarian tumors.

Wider implications of the findings: The extremely low level of IL-2 expression was found in postoperative and inflammatory adhesions. The highest degree of this cytokine was detected in external genital endometriosis. The low expression of IL-2 may indicate to the changing of peritoneum regeneration in the form of repair retardation and as a result the adhesions formation.

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