



**2** ■ **Ulusal**  
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SS-09

**IMMUNOHISTOCHEMICAL EVALUATION OF TGF- $\beta$  ISOFORMS IN CASES WITH OVARIAN ENDOMETRIOSIS AND FOLLICULAR CYST**

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**OBJECTIVE:** To evaluate the distribution of Transforming Growth Factor (TGF)- $\beta$ 1,  $\beta$ 2 and  $\beta$ 3 in surgical specimens of the cases with endometriosis and follicular cysts.

**MATERIAL AND METHODS:** This prospective clinical study was carried out at Aegean Obstetrics and Gynecology Training and Research Hospital, a tertiary referral center. A total of 44 reproductive aged women operated because of adnexial masses and revealed pathologic diagnosis<sup>7</sup> like endometriosis (Group I; n: 22 cases) and follicular cyst (Group II; n: 22 cases) were enrolled into the study. A semi-quantitative examination of immunohistochemical staining was evaluated as light (+), medium (++) and strong (+++). According to these staining levels, each case was scored as having one, two or three points.

**RESULTS:** TGF- $\beta$ 1, TGF- $\beta$ 2 and TGF- $\beta$ 3 staining scores were (48.5 $\pm$ 3.1), (25.4 $\pm$ 2.3), and (43.7 $\pm$ 2.9) in Group I; and (29.2 $\pm$ 2.5), (26.5 $\pm$ 2.2), and (41.1 $\pm$ 3.0) in Group II, respectively.

**CONCLUSION:** Ovarian tissue TGF- $\beta$ 1 immunoreactivity was significantly increased in endometriosis cases when compared with follicular cyst. There are needed further studies to elucidate the importance of this finding in the pathogenesis of endometriosis.

**KEY WORDS:** Transforming Growth Factor (TGF)- $\beta$  isoforms, endometriosis, follicular cyst

SS-10

**A NEW METHOD ON THE NONINVASIVE DETECTION OF ENDOMETRIOSIS: RESEARCH AND DEVELOPMENT OF SCINTIGRAPHIC SURVEY ON ENDOMETRIAL EXPLANTS IN RAT**

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**OBJECTIVE:** Endometriosis is defined as the presence of functional endometrial glands and stroma outside the uterine cavity. The immunoassay and imaging techniques that are currently used to detect endometriosis have many shortcomings. Laparoscopy, the optimal diagnostic tool to date, also has some limitations and, because it is invasive, cannot be used to monitor endometriotic lesions after surgical removal or post-hormonal therapy. Radiolabelled antibodies are a class of imaging agents for the detection of disease. The procedure of external imaging

to disclose foci of increased radioactivity (e.g. endometriotic lesions) after the injection of radioactive antibodies has been termed radioimmunodetection (RAID). A current focus of this study is the application of the powerful technology of RAID to the clinical and noninvasive diagnosis of endometriosis.

**MATERIALS AND METHODS:** Fourteen female Wistar rats, aged 6-8 weeks, and 150-200 g of weight were kept in temperature (21-22°C) and humidity (60±5%) controlled conditions. A 12:12 hr light and dark cycle was maintained. Food and water were available *ad libitum*. Endometriosis was induced surgically using the method described by Vernon and Wilson. Rats were anesthetized with intraperitoneal injection of ketamine. The abdomen was opened through a 3-4 cm midline incision. Left uterine horn was ligated at both uterotubal junction and cervical end, and was excised. The removed uterine horn was immersed in saline solution, and the endometrium was exposed by bisecting along its antimesenteric axis; 5x5 mm sections were cut. These explants were then fastened onto the peritoneum on the right side of the ventral abdominal wall between inferior renal pole and bladder close to an artery by silk sutures. Three weeks after the initial surgery, midventral laparotomy was performed to determine the attachment and viability of endometrial explants. Two rats were taken out of the study because the one explant was nonviable and one explant was covered by omentum. The remaining 12 rats with endometriosis were randomly divided into two groups of six rats per each. Group 1, was injected with in vivo Tc-99m-labeled red blood cell. Group 2 was given 3.7 MBq iodine-131 labeled tamoxifen, which was prepared as described previously. The Nuclear physician assessing the scintigraphy was blinded to the site of endometrial explant. External image were obtained at 15, 30 and 240 minute after initial injection of the radioactive materials. Immediately after scintigraphic procedure, a third laparotomy was performed and hyperactive areas were seen in gamma camera checked with visual examination. The explants were then fixed in 10% formalin for histologic examination.

**RESULTS:** External image of Tc-99m-labeled red blood cell-injected rats were successfully obtained. In 4 out of 6 rats, hyperactive areas were determined in gamma camera. During the laparotomy, these hyperactive areas were checked and found to be endometrial explants. The remaining two rats, whose image were negative, underwent laparotomy and visual examination revealed that the explants were viable but they were small and covered with adhesions. In iodine-131 labeled tamoxifen group, external image of explants were not obtained. For that reason, radioactivity of explants were measured externally by using gamma probe. Radioactivity of endometrial explants were less than bladder and renal radioactivity, where iodine-131 labeled tamoxifen was excreted through the urinary system. Radioactivity at the opposite site of the implants was found to be smaller than endometrial explants. After the laparotomy, background radioactivity of excised explants were measured and found to be comparable to opposite sites.

**CONCLUSIONS:** This experimental study demonstrated for the first time that *in-vivo* Tc-99m-labeled red blood cell might be useful for clinical and noninvasive diagnosis of peritoneal endometrial explants. The noninvasiveness of the scintigraphy can also be a major advantage, and repeat imaging to monitor efficacy of treatment and recurrence is feasible.