ISO-10  The Hyperexpressions of Undifferentiated markers of Stem Cells in the Endometrium of Patients with Endometriosis

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Objective: Recently it was proposed that stem cells may be associated with the pathogenesis of endometriosis. The purpose of this study is to observe whether the endometrial cells of women with or without endometriosis have the morphological characteristics of stem cells in vitro culture, and to investigate for the expressions of undifferentiated markers of stem cells, OCT-4 and CXCR4.

Methods: A total of 6 women with endometriosis and a total of 10 women without endometriosis or adenomyosis were included in this study. We observed the endometrial cells obtained in the menstrual blood at menstrual cycle day 2 to 4 and cultured, subsequently observed putative very small stem cells separated by focal plaque and cultured. The morphological characteristics of stem cells were observed in vitro culture by microscopy and the expressions of OCT-4 and CXCR4 of endometrial cells were analyzed by real time PCR. Results: The endometrial cells of patients with endometriosis showed the different morphological characteristics compared with control in vitro culture; heterogeneous stromal cells, more common 6-8 μm sized mobile cells less than erythrocyte and more common 20 μm sized hyperchromatic round cells. In vitro culture after the separation of 6-8 μm sized cells by ficoll-plaque, they showed the several characteristics of stem cells: self-renewal, asymmetrical cell division, colony formation and embryoid body-like formation. These cells showed the similar characteristics of very small embryonic-like stem cells; the 6-8 μm sized mobile cells, cell migration or adhesion to supportive cells, sphere formation and nuclear recombination with cell fusion in supportive cells. In the investigation as the expressions of OCT-4 and CXCR4 by real time PCR, the group with endometriosis were respectively 5.66 times and 17.69 times as high as that without endometriosis (p<0.05). Conclusion: The expressions of the undifferentiated markers of stem cells, OCT-4 and CXCR4, were significantly higher in the group with endometriosis. This study suggests that stem cells may play a key role in the pathogenesis of endometriosis and OCT-4 and CXCR4, the undifferentiated markers of stem cells, may use a tool for diagnosis or follow-up.

ISO-11  Changes in the Expression of Vascular Endothelial Growth Factor A (VEGF-A) mRNA during Ligand-Induced Down-Regulation of Luteinizing Hormone Receptor (LHR) in the Ovary

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[Objective] Given the vital role of VEGF-A in ovarian angiogenesis, whose expression is stimulated by LH/hCG in the ovary, we examined the relationship between VEGF-A and LHR mRNA expression to test whether VEGF-A expression is acutely dependent on LHR expression. [Methods] Immature rats were treated with PMSG followed by hCG 56th later (day 0). On day 5, animals were treated with hCG (50 IU) and ovaries were collected at specific time intervals. VEGF-A and LHR mRNA expression were examined by real-time PCR and in situ hybridization. The protocols were approved by the University Committee on the Use and Care of Animals. [Results] The results of PCR showed a maximum 50% reduction in the expression of VEGF-A mRNA in luteal cells after 50 IU of hCG, with a concomitant 90% reduction in that of LHR mRNA. Examination using in situ hybridization showed a dramatic decline in the VEGF-A mRNA expression at 12h, similar to that seen for LHR, without structural damage to corpora lutea. The VEGF-A mRNA expression returned to control level 53h later when the LHR expression was also restored. [Conclusion] The close association between the VEGF-A and LHR mRNA expression during ligand-induced down-regulation of LHR mRNA, a phenomenon which also occurs following the preovulatory LH surge, suggests the possibility that VEGF-A-induced vascularization of the ovary is dictated by the expression of LHR.

ISO-12  Evaluate the safety and efficacy of uterine preservation in pelvic reconstruction for severe uterine prolapse with polypropylene mesh

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The goal of this study is to evaluate the safety and efficacy of uterine preservation in pelvic reconstruction for severe uterine prolapse with polypropylene mesh. Sixty-seven women with uterine prolapse POP-Q stage III or IV were into this study. 18/67 (26.8%) USI patients, 30/67 (44.7%) occult SUI patients and 7/67 (10.4%) mixed incontinence patients combined with transobturator membrane sling of TVT-O tape. The objective assessments were carried out with POP-Q staging system, urodynamic examination, and one-hour pad test. The subjective assessment was evaluated of urinary and prolapse symptoms. Of the 67 patients, including 59 patients with POP-Q stage IV and 8 patients with POP-Q stage III uterine prolapse, 6/67 (89%) received anterior mesh and posterior IVS, 30/67 (43.3%) received Perigee and posterior IVS, 35/67 (52.2%) received total Prolift and 54/67 (80.5%) and 54/67 (80.5%) incontinence patients combined with anti-incontinence TVT-O sling. The mean follow-up interval was 19.6 months (12-40 months). The mean hospitalization was 5 days (3-10 days) and the mean blood loss was 154 mL (50-400 mL). The objective cure rate for the treatment of uterine prolapse was 89.5%, and the objective cure rate for the treatment of urinary incontinence was more than 90%, but there were 10/67 (15%) patients suffered from postoperative voiding difficulty and 2/54 (3.7%) needed the operation of cut the TVT-O tape. The postoperative complications included 2 patients suffered from urinary tract infection and needed hospitalization with and 8/67 (11.9%) occurred vaginal mesh exposure, 5/67 (20.5%) needed operation to excite the exposed mesh. There was no major perioperative complications, no hematoma, no rectum and bladder perforation during operation.