I S—107

Intrauterine microdialysis - a novel approach for the clinical assessement of human endometrial function.

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The clinical assessment of human endometrial function remains a problem. While considerable evidence has accumulated outlining the importance of several cytokines and growth factors for implantation our clinical approaches are still restricted to methods assessing endometrial morphology as a single parameter (ultra sonography, endometrial dating). We have therefore developed an intrauterine microdialysis device (IUMD), that allows the measurement of intrauterine paracrine mediators and their reaction to exogenous stimuli in the human female in vivo. The IUMD consists of plasmapheresis tubing (Mw cut-off 2000 kDa) glued into an afferent and an efferent catheter on each side. The system is inserted into the uterine cavity and continuously perfused with sterile saline by means of a precision peristaltic pump (30μl/min). In the effluent we were able to confirm the presence of a variety of cytokines considered essential for implantation in the rodent also within the uterine fluid of the human female (e.g.LIF, M-CSF,EGF,IL-1α,IL-1β, IL-6,VEGF,hCG). To investigate embryo maternal paracrine interactions,the paracrine milieu of a very early pregnancy was simulated by applying small concentrations of urinary hCG (50 IU/hr) to 20 normal cycling women in the late luleal phase of the menstrual cycle and measuring the response of the endometrium in the effluent. HCG considerably modulated endometrial paracrine function parameters for decidualisation such as IGFBP-1 and prolactin were significantly in inhibited by hCG as was M-CSF. In contrast LIF and VEGF were stimulated by the infusion hCG. These effects seemed to be mediated by local hCG/LH receptors that could be demonstrated by means of nested rT-PCR The hCG concentrations applied did not alter progesterone secretion by the corpus luteum again suggesting a direct effect of hCG on the endometrium . Urinary hCG preparations do in addition to their effects on the corpus luteum also directly alter endometrial differentiation and paracrine function.

I S—108

HYSTEROSCOPIC TUBAL CATHETERIZATION FOR TREATMENT OF INFERTILITY WITH PROXIMAL TUBAL OCCLUSION

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Objectives: The purpose of this study is to evaluate the efficacy of modified hysteroscopic catheterization for treatment of proximal tubal occlusion.

Methods: This study was performed in 17 patients who were diagnosed to proximal obstructions of both tubes by hysterosalpingography (HSG) from January lst.,1994 to October 31st, 1997. Hysteroscopic catheterization could be performed without concomitant laparoscopy, because observation of dye-flow in uterine cavity was possible by gentle injection of dye through the catheter and by gentle control of continuous media flow.

Result: On hysteroscopic exam, 4 of 17 patients revealed the normal ostia without any fibrosis and they seem to be obstruction by spasm or by microplug. 6 of 17 patients showed mild fibrosis, and the other 7 patients revealed the severe fibrosis of ostia. Catheterizations of ostial were easily succeeded in all four no-fibrosis patients and six mild fibrosis patients. In 6 patient of severe fibrosis, catheterization were succeed although they very difficult. However in one patients of fibrosis, fibrosis of ostia was too hard to pass the catheter. Therefore overall success rate was 94% (16 to 17 patients). In follow-up one month later by HSG, 2 patients of no fibrosis revealed proximal occlusion findings of both tubes again.

Conclusions: This modified hysteroscopic catheterization is simple and effective method for diagnosis and treatment for proximal obstruction of fallopian tube.