하에 long-term down regulation (LTDR)이 자궁내막증 및 자궁선근증에 의한 불임의 치료에 도입되었으나 LTDR과 난소반응에 대한 연구에서는 뚜렷한 결론이 없는 상태이다.

목 적: 자궁내막증 또는 자궁선근증을 가진 불임환자의 치료에 있어 GnRH analogue를 장기간 사용한 LTDR과 단기 또는 장기요법 후 과배란 유도시 난소반응에 대해 비교하고자 하였다.

연구 대상 및 방법: 복강경과 질식 초음파를 이용하여 자궁내막증 또는 자궁선근증을 진단 받은 불임 여성 16명의 45 cycles이 연구 대상이 되었으며 체외수정시술 시 단기 또는 장기요법을 이용하여 과배란 유도를 시행한 군 (group 1, 29 cycles)과 같은 환자에서 GnRH analogue를 3개월 이상 장기간 사용하여 down regulation (LTDR) 시킨 후 gonadotropin을 이용하여 과배란 유도를 시행한 주기 (group 2, 16 cycles)의 난소반응을 비교하였다.

결 과: 환자의 평균 연령 (mean±SE)은 group 1이 33.2±1.1, group 2는 34.0±1.1이었으며 평균 과배란 유도 주기횟수는 각각 2.0±0.3, 2.8±0.4이었다. Estradiol의 기저치는 group 1에서 23.74±3.4 (pg/ml), group 2에서 14.0±3.2 ($p<0.05$), hCG 투여당일의 estradiol의 농도 (pg/ml)는 각각 2360.7±348.4, 1492.1±223.9 ($p<0.05$) 과배란 유도의 기간 (days)은 각각 11.2±0.4, 13.6±0.5 ($p<0.05$) 등을 보여 통계적인 차이를 보였으나 과배란을 위해 사용된 gonadotropin의 양 (ampules), hCG 투여 당일의 12 mm 이상의 follicle 수, 채취된 난자수 및 난소의 무반응, 수정란 이상 등으로 과배란 및 체외수정시술이 취소된 경우는 통계적으로 유의한 차이가 없었다.

결 론: 이 연구에서는 LTDR 시행후 과배란 유도시 단기 또는 장기요법 등의 과배란 유도 방법과 비교하여 난소의 반응이 저하되는 경향을 보였지만 연구 대상군의 확대조사가 필요하리라 사료된다.

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P-26 Hydrosalpinx Fluid Inhibits Trophoblast Proliferation *in Vitro*: A Potential Mechanism for Implantation Failure and Early Pregnancy Loss

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Objective: It has been recently suggested that the presence of hydrosalpinges has a negative impact on successful pregnancy; however, the pathological basis for this mechanism is poorly understood. Since cytokines has been associated with inflammatory processes as well as with embryotoxic characteristics, we hypothesized that HF plays a role in early implantation failure. We used the Jeg-3 choriocarcinoma cell line as a source of trophoblast cell and exposed them to

varying concentrations of hydrosalpinx fluid to evaluate if this fluid affects trophoblast cell proliferation *in vitro*.

Design: 3-day proliferation assay of trophoblast cell in response to hydrosalpingeal fluid from 10 patients undergoing laparoscopy was performed. We also checked the levels of several cytokines (INF-γ, TNF-α, IL-10, IL-6) in this fluid.

Materials and Methods: Hydrosalpinx fluid was aspirated during laparoscopy. All samples were centrifuged at 10,000 RPM for 10 minutes to remove cellular debris and frozen at 20℃ until analysis. Trophoblast cell (Jeg-3 choriocarcinoma cell line; ATTC, Bethesda, MD) proliferation in vitro was determined by a colorimetric immunoassay (Boehringer Mannheim), based on the measurement of BrdU incorporation during DNA synthesis, using a kit. The optical absorbance of the samples was measured in an ELISA reader at 450 nm. Cytokines were assayed by a two step sandwich enzyme immunoassay technique (Biosource, CA; lower limit of sensitivity, 4 pg/mL for IFN-γ, 1 pg/mL for TNF-α, 2 pg/mL for IL-6, 5 pg/mL for IL-10). Data are presented as mean±SEM. Statistical analysis was performed by regression analysis.

Results: Samples from 7 out of 10 patients significantly suppressed trophoblast proliferation in a dose dependent manner ($r=-0.0673$, $p<0.05$). Trophoblast cell proliferation was assayed in the presence of six different concentrations of hydrosalpinx fluid (0%, 25%, 50%, 75%, 90%, 100%). IFN-γ and IL-6 were present in 2 out of 10 HF samples with a mean concentration of 10.45 pg/ml±0.95 pg/ml and 0.814 pg/mL±0.59 pg/mL. IL-10 was present in 4 out of 10 samples with concentration of 2.83 pg/mL±1.27 pg/mL. TNF-α was checked in all samples, with a mean concentation of 13.12 pg/mL±1.10 pg/mL. The mean concentration of TNF-α was greater in the hydrosalpinx fluid from suppressor group than nonsuppressor group (14.74 pg/mL±1.05 pg/mL versus 9.33 pg/mL±0.55 pg/mL, respectively).

Conclusion: In our study, fallopian tube fluid from the majority of women with hydrosalpinx significantly inhibited trophoblast proliferation in vitro model system. Fallopian tube fluid may play a similar role in vivo. Given the possible role of cytokines in the regulation of pregnancy, and maintenance of a proper hormonal milieu, we postulate that high levels of the Th1 cytokine, TNF-α, may represent a potential mechanism for early implantation failure in women with hydrosalpinx.

P-27 Effect of Hydrosalpingeal Fluid on the Implantation in-vitro in a Murine Model

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Hydrosalpinx affects the clinical outcome of human IVF-ET treatments. However, the mechanism of negative impact on the successful implantation and pregnancy is not fully explained. In our previous study, hydrosalpingeal fluid (HSF) has a mild adverse effect on the early embryonic development of mouse embryos. The aim of this study was to investigate the effect of HSF on