

embryo RNA samples. To examine effect of PPAR $\delta$  ligands and antagonists on embryonic development, embryos were collected at two cell stage and cultured in the presence of cPGI (a stable analogue of PGI $_2$ ) or PPAR antagonists (GW9662 and T0070907) in KSOM medium at various concentrations.

**Results:** PPAR $\delta$  was uniquely expressed in maternal and zygotic mRNAs during early embryogenesis in mice, while PPAR $\alpha$  and PPAR $\gamma$  are expressed only at oocyte and PN stages, respectively. Maternal PPAR $\delta$  mRNAs gradually decreased to undetectable level at 4~8 cell stages and increased from 8 cell stage onwards. Among three members of RXR family, RXR $\alpha$  and RXR $\beta$ , but not RXR $\gamma$ , were similarly expressed during early embryogenesis. Interestingly, mRNA expression of IP, a membrane receptor for PGI $_2$ , was very low to undetectable by RT-PCR throughout preimplantation embryo stages. Temporal expression patterns of PPARs, RXRs and IP receptor suggest potential role of PPAR $\delta$ /RXR heterodimers as effective receptor system for PGI $_2$  during blastocyst development and hatching. GW9662 and T0070907, PPAR antagonists at 10  $\mu$ M, had no adverse impact on embryonic developments, but they significantly reduced complete hatching rate at post-hCG 144 hr.

**Conclusions:** PPAR $\delta$ /RXR $\alpha$  and/or PPAR $\delta$ /RXR $\beta$  heterodimers could mediate the actions of PGI $_2$  on transcriptional regulation of genes involved in preimplantation embryo development and hatching in mouse embryos.

## P-27                      Antral Follicle Count and Mean Ovarian Area as Predictors of Ovarian Response and Outcomes of In Vitro Fertilization and Embryo Transfer

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**Background & Objectives:** Prediction of ovarian responses prior to stimulation is useful in counseling patients and helpful in considering adequate treatment options and adjusting stimulation protocols in individual patients for successful outcome. Several studies have demonstrated the correlations between antral follicle count (AFC), ovarian volume, and ovarian response to controlled ovarian stimulation (COH). However, there have been few studies on relationship between ovarian area, which is a more convenient and widely-used parameter in routine practice, and COH outcome. The aim of this study was to evaluate the day 3 AFC and mean ovarian area (MOA) determined by ultrasonography as predictors of ovarian responsiveness and treatment outcome in COH for IVF-ET.

**Method:** A total of 82 infertile women underwent COH with GnRH agonist long protocol were included. After pituitary down-regulation, numbers of antral follicles (2~9 mm) and mean area of ovaries were assessed by ultrasonography before the administration of gonadotropins. MOA was calculated on the largest

cross-sectional view of the ovary. Correlations were analyzed between AFC, MOA, and COH outcomes. Then, we divided the subjects into three groups with cut-off of lower and upper quartile values of AFC and MOA. Data were analyzed and compared between the groups.

**Results:** Significant positive correlation was observed between AFC and MOA ( $r=0.414$ ,  $p=0.003$ ). Both AFC and MOA correlated significantly with estradiol concentrations on hCG day, the number of follicles on hCG day, the number of oocytes retrieved, total cumulative embryo score (CES), and CES per transferred embryo. Lower AFC and MOA associated with higher cancellation rates, while higher AFC and MOA associated with higher clinical pregnancy rates.

**Conclusions:** The results of the present study suggest that both AFC and MOA could be useful markers to predict ovarian response to COH and outcomes of IVF-ET. It seems that we could use MOA with AFC in practice for the prediction of ovarian response and treatment outcome.

## P-28      과배란 유도 및 인공수정의 시술 시 Aromatase Inhibitor(AI)+Gonadotropin 병합요법과 Clomiphene(CC)+Gonadotropin 병합요법의 비교연구

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**Background & Objectives:** 과배란 유도 (superovulation)와 인공수정 (intrauterine insemination) 시 AI 병합요법과 CC 병합요법의 임상결과의 차이를 평가하여, AI 유용성을 평가해 보고자 하였다.

**Method:** 2003년 8월부터 2005년 12월까지 제일병원 아이소망센타를 방문한 환자들 중 불임기간이 1년 이상이고, 자궁난관조영술에서 적어도 한쪽 나팔관이 개통이 확인되었으며, 남성 정액검사서 정상 또는 경도의 운동성 저하인 환자들을 대상으로 과배란유도 및 인공수정을 시행한 결과들을 후향적으로 분석하였다. AI group (group A, n=36 cycles) Letrozole 2.5 mg (Femara; Novartis, East Hanover, NJ)를 생리시작 2~3일째부터 5일간 투여 후 7~8일째부터 gonadotropin을 투여하였고, CC group (group B, n=41 cycles)은 Clomiphene citrate 50~100 mg/day를 생리시작 2~3일째부터 5일간 투여 후 7~8일째부터 gonadotropin을 투여하였고, Control은 gonadotropin 단독 투여군으로 (group C, n=85 cycles) gonadotropin 75~150 IU을 생리 2~3일째부터 투여하였다.

**Results:** Group A, B, C 세 그룹간의 평균연령 (yr) 및 불임기간 (mon), basal FSH (mIU/mL)는 차이가 없었다 ( $30.3 \pm 2.0$  vs.  $31.0 \pm 1.9$  vs.  $30.9 \pm 2.0$ ,  $31.6 \pm 14.9$  vs.  $35.9 \pm 19.4$  vs.  $35.9 \pm 17.6$ ,  $7.7 \pm 3.3$  vs.  $6.6 \pm 3.0$  vs.  $7.6 \pm 2.2$ ). 15 mm 이상의 난포 수는 group A는  $1.92 \pm 1.25$ 로, group B의  $2.85 \pm 1.50$ 보다 작았으나 유의한 차이는 없었다. hCG 투여일의 자궁내막두께는 각각  $10.08 \pm 2.15$  mm,  $8.34 \pm 2.50$  mm,  $11.45 \pm 3.75$  mm로 group A가 group B에 비해 더 두꺼웠지만 통계적 차이는 없었고, group B가 유의하게 group C보다 얇았다 ( $p < 0.0001$ ). 총 gonadotropin 투여량은 group A는  $783.09 \pm 465.34$  IU, group B는  $676.83 \pm 375.93$  IU