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The relationship between follicular diameter and serum estradiol (E₂) in in vitro maturation, in vitro fertilization and embryo transfer (IVM-IVF)

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(Objectives)

It is important to determine what factors are related to better clinical outcomes in IVM-IVF. The present study was conducted to investigate the relationship between follicular diameter and E₂ level in IVM-IVF.

(Materials and Methods)

Total of 250 IVM-IVF cycles (142 cases) under 39 years old were divided into 2 groups based on the average diameter of the largest and second largest follicles on the day of HCG administration (A: 8-11mm, B: 11-13mm). Moreover, A and B were divided into 3 subgroups based on their E₂ levels (a: >75pg/ml, b: 75-140pg/ml, c: <140pg/ml) and (d: >90pg/ml, e: 90-200pg/ml, f: <200pg/ml). The number of oocytes retrieved, maturation rate, fertilization rate, implantation rate and cancellation rate of transfer were analyzed.

(Results)

The number of oocytes retrieved in Group A-b (13.2 ± 9.9) was significantly higher than either Group A-a (8.7 ± 5.7) or Group A-c (8.7 ± 6.2). Implantation rate was significantly higher in Group B-e (44.4%) than either Group B-d (0%) or Group B-f (5.6%). Transfer cancellation rate of Group A-b (10.5%) was significantly lower than either Group A-a (38.7%) or Group A-c (47.1%). Transfer cancellation rate of Group B-d (13.0%) was significantly lower than Group B-f (47.1%). No significant differences were confirmed in other parameters.

(Conclusions)

Better clinical outcomes are expected with follicular diameter of 8-11mm and E₂ level of 75-140 pg/ml or follicle diameter of 11-13mm and E₂ level of 90-200 pg/m in IVM-IVF.