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The relationship of tubal status with ovarian reserve and pregnancy rate of cleaved embryo transfer

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(Introduction)

Tubal factor is the major cause of female infertility irrespective of age and IVF-ET has been primarily applied. Pelvic inflammatory disease including salpingo-oophoritis is known to not only cause tubal lesions but also decrease ovarian reserve. The present study was conducted to investigate the relationship between tubal status and ovarian reserve, and also clinical outcomes of IVF-ET.

(Design)

Retrospective clinical study of private infertility clinic.

(Materials and methods)

Total of 3221 infertile females whose oviducts were tested by hysterosalpingography from 2008 to 2012 were investigated. Of those, 1295 retained patency of bilateral oviducts (group A) and 642 had unilateral or bilateral tubal occlusion (group B). Average antral follicle count and anti-mullerian hormone (AMH) level (ng/ml) in each group were compared in different age groups such as <30, 30-34, 35-39, and >39. Pregnancy rates (PR: %) under 39 years old of eSET of cleaved embryo (336 cycles) and blastocyst (362 cycles) in fresh (ET) and frozen-thawed (FET) transfers were also compared between the 2 groups. Chi-square test and student's t test were used to analyze the data.

(Results)

Antral follicle counts of group A and B were as follows. Age <30: 6.6 ± 2.7 and 6.3 ± 2.6 , Age 30-34: 6.1 ± 2.4 and 5.3 ± 2.2 ($p < 0.01$), Age 35-39: 4.8 ± 2.6 and 4.2 ± 1.9 ($p < 0.05$), Age >39: 3.0 ± 1.5 and 2.7 ± 1.5 , respectively. AMH values of group A and B were as follows. Age <30: 6.43 ± 4.18 and 4.66 ± 2.38 ($p < 0.05$), Age 30-34: 5.43 ± 6.08 and 4.81 ± 3.74 , Age 35-39: 3.55 ± 2.85 and 2.72 ± 1.94 ($p < 0.01$), Age >39: 1.63 ± 1.29 and 1.55 ± 1.83 , respectively. PRs of cleaved embryo in group A and B were as follows. ET: 34.1 and 19.7 ($p < 0.05$). FET: 27.6 and 21.1. Total: 31.7 and 21.4 ($p < 0.05$). PRs of blastocyst in group A and B were as follows. ET: 44.9 and 44.8. FET: 52.8 and 47.3. Total: 50.2 and 46.4.

(Conclusions)

Antral follicle counts and AMH values decreased when tubal impairment existed in some age groups. PR of cleaved embryo in fresh ET cycles was significantly higher in the patients retaining oviduct patency. However, tubal status did not relate to the PR of blastocyst. The present study suggests that tubal impairment is accompanied by decreased ovarian reserve and early embryonic development in uteri with resulting pregnancy.