

American Society for Reproductive Medicine (69th Annual Meeting)
Boston (USA)、2013.10.12-17

Tubal impairment influences the level of AMH and the implantation rate of cleaved embryo, but not blastocyst

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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 causes tubal lesions and is known to decrease ovarian reserve. The present study was conducted to determine the influence of tubal status on the level of AMH and clinical outcomes of IVF-ET.

(Design)

Retrospective clinical study.

(Materials and methods)

Total of 3221 infertile females whose oviducts were tested by HSG from 2008 to 2012 were investigated. Of those, 1295 retained both oviducts patency (group A) and 642 had unilateral or bilateral tubal occlusion (group B). Average levels of AMH (ng/ml) in each group were compared in different age groups such as <30 (n=96), 30-34 (n=274), 35-39 (n=308), and >39 (n=129). Blastocyst development rates (BR: %) (n=998) and pregnancy rates (PR: %) of eSET of cleaved embryo (336 cycles) and blastocyst (362 cycles) in fresh (ET) and frozen-thawed transfers (FET) under 39 years old females were also compared between the 2 groups. Chi-square test and student's t test were used to analyze the data.

(Results)

AMH values of group A and B were as follows. Age <30: 5.13 ± 3.02 and 3.85 ± 2.14 ($p < 0.05$), Age 30-34: 3.95 ± 2.44 and 3.76 ± 2.59 , Age 35-39: 3.19 ± 2.31 and 2.57 ± 1.82 ($p < 0.05$), Age >39: 1.63 ± 1.29 and 1.55 ± 1.83 , respectively. BR in group A and B were 50.9 and 45.4 ($p < 0.1$). PR 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 ($p < 0.05$). PR 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)

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