AMH level is a good indicator for therapeutic choice of IVM-IVF

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【Introduction】

Anti Mullerian Hormone（AMH） is secreted from granulosa cells in primary, pre-antral and early antral follicles, and its serum level is known to be one of the markers for ovarian reserve. IVM-IVF is a novel option of ART for PCO patients without suffering from OHSS and mitigates patients' physical and mental stress. In the present study, it has been investigated whether AMH level could be an indicator for therapeutic choice of IVM-IVF.

【Materials and Methods】

IVM-IVF was performed on 32 patients (in 41 cycles) under 39 year old from January 2009 to September 2011. They were divided into 4 groups based on their AMH levels (A: <10 pmol/ml, B: 10-40 pmol/ml, C: 40-70 pmol/ml and D: 70- pmol/ml). Immature oocytes retrieved were cultured in IVM medium with 10% SSS for 26 hours, and ICSI was performed on mature oocytes. Embryos were transferred on day 2 or in the next cycle after cryopreservation. Assisted hatching was performed on all embryos before transfer. Diameter of the largest follicle at the day of HCG administration, endometrial thickness, number of oocytes retrieved, maturation rate, fertilization rate, cleavage rate, number of transferrable embryo, transferrable embryo rate and pregnancy rate were compared among 4 groups.

【Results】

Diameter of follicles and endometrial thickness were not significantly different among 4 groups. Significantly more oocytes were retrieved in the group of higher AMH level than lower level (A:2.0, B:5.8, C:6.9, D:14.3). Maturation rates in each group were A: 75.0%, B: 51.7%, C: 48.5% and D: 39.5%. Significantly high maturation rate was obtained in group A compared to C and D. No significant differences were confirmed among 4 groups in fertilization rate (A: 83.3%, B: 70.0%, C: 72.3%, D: 84.3%), cleavage rate (A: 90.0%, B: 95.2%, C: 85.3%, D: 93.0%), and number of transferrable embryo (A: 0.3, B: 1.3, C: 1.4, D: 2.0). Transferrable embryo rates were A: 20.0%, B: 61.9%, C: 55.9%, and D: 41.9%, and group B and C were significantly higher than group A. Pregnancy rates in each group were A: 0.0%, B: 16.7%, C: 33.3% and D: 37.5%. No pregnancy was achieved AMH under 10 pmol/ml.

【Discussion】

AMH is a good indicator of the number of immature oocyte retrieved in IVN-IVF practice. The higher number of oocytes retrieved, the higher pregnancy rate due to higher number of good quality embryos. At the same time, no pregnancy was obtained when AMH level was lower than 10 pmol/ml. It is concluded that IVM-IVF is not the best option for the patients with low AMH level, and therefore AMH level could become a good indicator for therapeutic choice of IVM-IVF.