Assessment of Ovarian Reserve Tests for Prediction of In Vitro Fertilization Outcome

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Background: Assessment of ovarian reserve tests before controlled ovarian hyperstimulation (COH) is essential for successful outcome of assisted reproductive technologies.

Objective: The aim of this study was to assess the most reliable markers of ovarian reserve for prediction the outcome of ovulation induction in terms of oocyte yield and chance of pregnancy.

Methods: The prospective study included 111 infertile women, who underwent IVF with or without ICSI. Patients with an oocyte count <=3 were considered as poor responders; those with >3 were considered as good responders. AFC, levels of FSH and AMH were determined on day 3 of menstrual cycle.

Results: The results of the whole study shows that, the correlation between AMH and number of oocytes was the strongest (rs = 0.6) as well as between AFC and number of oocytes (rs = 0.6).

Poor responders were older, having higher FSH concentrations, lower AMH and AFC values and significantly lower number of retrieved oocytes and embryos compared with good responders (p<0.05). Women with clinical pregnancy were younger, had statistically higher values of AMH, AFC, oocytes and embryos number in comparision with non pregnant one (p<0.05). No significant differences were observed in concentrations of FSH. The binary logistic regression analysis for clinical ongoing pregnancy shows, that age is the only factor, which significantly predicted the likelihood of clinical ongoing pregnancy (B=0.14; p=0.005).

Conclusion: Determination of AMH together with AFC may improve the evaluation of ovarian reserve and predict ovarian response after ovulation induction. Consideration of woman's age is very important for prediction of In vitro fertilization outcome.