

P-540 Wednesday, October 10, 2018 6:30 AM

DISCORDANT FOLLICLE-STIMULATING HORMONE AND ANTI-MULLERIAN HORMONE AND THE PREDICTION OF EUPLOID BLASTOCYST YIELD.

A. Reig,^a S. Morin,^b L. R. Goodman,^b J. M. Franasiak,^b T. Molinaro,^b R. Scott,^b M. D. Werner.^b ^aObstetrics and Gynecology, Bridgeport Hospital, Bridgeport, CT; ^bIVI RMA New Jersey, Basking Ridge, NJ.

OBJECTIVE: To determine the predictive value of discordant (FSH) and anti-Müllerian hormone (AMH) levels on blastocyst yield and ploidy results during in-vitro fertilization cycles.

DESIGN: Retrospective, cohort analysis of a large database at a single IVF center. Primary outcome: euploid blastocyst yield. Secondary outcomes: number of mature oocytes retrieved, number of fertilized oocytes, total number of usable blastocysts (prior to genetic screening).

MATERIALS AND METHODS: A retrospective cohort of patients who underwent ovarian stimulation and oocyte retrieval followed by trophoblast biopsy for pre-implantation genetic screening from 2012 to the present. The patients were divided into four groups based on their FSH and AMH levels: normal FSH and normal AMH (group A); elevated FSH and normal AMH (group B); normal FSH and decreased AMH (group C); and elevated FSH and decreased AMH (group D). The cutoff values were 12 IU/L for FSH and 1.5 ng/mL for AMH. Outcomes were quantified and compared using ANOVA, with a p-value significance threshold of 0.05. Linear regression was employed to investigate covariates which may have impacted outcome. The most parsimonious model was selected to compare the impact of AMH/FSH levels on the average rate of embryo euploidy when controlling for age.

RESULTS: Of the 3898 patients, 2486 were assigned to group A, 49 to group B, 1137 to group C, and 226 to group D. Average mature oocytes retrieved per cycle were 14.6 \pm 8.2 in group A, 8.8 \pm 4.1 in group B, 7.5 \pm 4.4 in group C, and 4.9 in group D ($p < 0.01$). A significant difference in fertilization paralleled the above findings ($p < 0.01$). The percentage of usable blasts were similar for groups B and C but were significant for all other comparisons ($p = 0.04$, $P < 0.01$). In the adjusted linear regression, both groups with an elevated FSH level (B and D) had a lower rate of euploid blastocysts in comparison to group A, no difference was seen in group C. This suggests that FSH is a better predictor of the likelihood of obtaining a euploid blastocyst.

CONCLUSIONS: Values of a low AMH and high FSH are well correlated with diminished ovarian reserve. This is the first study to look at discordant AMH/FSH values as a predictor of embryologic parameters. This data suggests that in patients with discordant values a high FSH is a better predictor of the diminished likelihood of obtaining a euploid blastocyst.

This information may be helpful in counseling patients with diminished ovarian reserve in the prediction of a successful outcome.