ACOG District II

ACOG 2020 DISTRICT II VIRTUAL ANNUAL MEETING

#15

Junior Fellow Research Day Oral Presentation and iPoster Session Contests

RESEARCH ABSTRACT FORM

NAME: Bailey McGuinness MD

RESEARCH TITLE: The Effect of Serum Estradiol Change after Ovulation Trigger on Autologous Oocyte Production and Maturation

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INTRODUCTION: Studies have postulated that the change in estradiol following ovulatory trigger is indicative of IVF outcomes, while other studies show no correlation. The objective of this study is to determine if a change in estradiol level following ovulatory trigger correlates with the number of mature oocytes (M2) retrieved.

METHODS: This is a retrospective cohort study of patients undergoing IVF at a single academic institution in 2018. Cycle outcomes were collected. Generalized linear regression models were used to determine impact of estradiol change from the day of trigger ("pre") to the day after trigger ("post") on the M2 number, controlling for age, absolute pre-trigger estradiol level, AMH, number of previous cycles per patient, and type of trigger used. Estradiol change was analyzed as a categorical variable between pre- and post-trigger: 1) estradiol decrease >20%, 2) estradiol no-change (within 20% higher/lower) and 3) estradiol increase >20%. Kruskal-Wallis tests were used to compare the three groups.

RESULTS: 658 retrievals had complete data for analysis. A decrease in estradiol was not a significant predictor of M2 number. An increase in estradiol resulted in significantly more M2 compared to the estradiol no-change group, p=<0.0001. A doubling in estradiol correlated with a 33% increase in M2. M2 count was significantly associated with patient age, AMH, and estradiol increase or no change between pre- and post-trigger, p values <0.001.

	Estradiol Decrease (N=11)	Estradiol No-change (ref) (N=383)	Estradiol Increase (N=263)	P value*
Age (years)	36	36	36	0.5
AMH (ng/mL)	4.1	2.7	4.3	**<0.001**
Total oocytes retrieved	18	12	15	**<0.001**
M2 oocytes	12	10	12	**<0.001**
GnRHa/HCG trigger	8 (73%)	83 (22%)	79 (30.5%)	**<0.001**

* P value comparing Estradiol no change vs. increase

CONCLUSIONS: A >20% increase in estradiol level following ovulation trigger is a positive predictor of M2 number per cycle.