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P-606 Does trigger timing make a difference in oocyte donation?

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Study question: Is there optimal trigger timing in controlled ovarian stimulation (COS) for egg donors for better clinical outcome?

Summary answer: Different trigger timings may not affect oocyte maturity rate. 35 hour’s trigger may create optimal timing for embryology to complete fertilization into a natural concept.

What is known already: Trigger exposure time is still a debatable clinical issue. Ovulation is triggered by administration of hCG or GnRH agonist, with retrieval taking place between 35th and 38th hour post triggering. There was a tendency to decrease post maturity risk for MII oocytes also early triggering will create optimal timing for embryology laboratory for denudation, oocyte vitrification and fertilization process under oocyte cytoplasmic maturity (38 hours post trigger) and natural concept fertilization (till 40 hours post trigger) for better clinical outcome.

Study design, size, duration: This single center retrospective study included oocyte donors (n = 1289) with different timing of eggs retrieving. They were divided into two groups: group A, with exposure of the medicine trigger for 35 h and group B with timing which was 36 h before egg retrieval.

We evaluated the concordance between the follicle-to-oocyte index (FOI), antral follicle count (AFC), number of MII oocytes, maturation rate (MR), utilization rate (UR) and the timing of triggering.

Participants/materials, setting, methods: The number of donors was 784 and 505 in A and B groups respectively. The mean age of the patients in this study was (SD) 26.2 (3.2) and 26.7 (3.3) years. Cycle characteristics were compared. Data was assessed using the Shapiro-Wilk test for the normality of the distribution of the variables. The association between COS cycle parameters and the differences in COS output was assessed by T-Student (parametric) or U-Mann-Whitney (non-parametric).

Main results and the role of chance: Donors in groups A and B had a similar mean number of oocytes retrieved (33.50 ± 14.12 vs 30.44 ± 13.00), in groups A and B respectively. The same tendency with no statistical difference was mentioned for values number of MII oocytes (SD): 25.16 (11.73) and 20.50 (10.19), for MR - 81% vs 80% and for AFC: 33.50 (14.18) and 30.44 (13.00) in groups A and B, respectively.

Unexpectedly, values for UR and FOI (SD) were statistically significant different (p = <0.05): 94.1% (17.2) vs 89.1% (20.2) and 92.51 (11.43) vs 83.43 (15.63), accordingly, in group A and B respectively. Group A donor oocytes vitrified on 38 hours post trigger and fertilized on 40 hours from sibling oocytes. Group B donor oocytes vitrified on 39 hours and fertilized on 42 hours from sibling oocytes. Values for oocyte survival rate post warming were statistically non-significant different (p > 0.05): 96.64% (10.95) vs 95.08% (10.03). Cleavage arrest rate were statistically significant different; 8.01% vs 28.06% and used blastocysts rate were statistically significant
different; 54.67% (5.02) vs 42.36% (4.08). Values for fertilization were statistically non-significant different; (p > 0.05): 98.64% (12.24) vs 97.08% (11.96) and used blastocystis rate were statistically significant different; 67.22% (6.18) vs 51.88% (5.07)

Limitations, reasons for caution: This study is limited by its retrospective nature and the established strict time parameters of the study can be considered a limitation.

Wider implications of the findings: As we can see, the issue of the optimal period for oocyte retrieval after the administration of human chorionic gonadotropin should be considered very individually and in further studies it is possible to take into account wider time intervals in the design of trials.

Trial registration number: not applicable