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CONTRACEPTIVE USE DOES NOT INFLUENCE VITRIFIED OOCYTE YIELD IN PATIENTS UNDERGOING OOCYTE CRYOPRESERVATION

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OBJECTIVE:

Hormonal contraception is known to alter serum AMH in healthy women, with the extent of suppression varying depending on the type and duration of use (1). Hormonal contraceptive use has been linked to suboptimal outcomes in infertile patients undergoing controlled ovarian hyperstimulation and embryo transfers (2). Yet, there is limited research on the use of hormonal contraceptives in patients undergoing oocyte cryopreservation. The objective of this study is to evaluate the possible association of various forms of hormonal contraceptive use on oocyte yield and maturation in patients undergoing oocyte cryopreservation cycles.

MATERIALS AND METHODS:

We included all patients who underwent oocyte vitrification cycles between 2011 and 2023. Only antagonist protocol stimulations were included in the analysis. Patients with PCOS, Fragile X, a cancer diagnosis, or AMH levels < 0.7ng/dL were excluded. Cohorts were stratified based on their contraceptive use. Comparative statistics, including Wilcoxon, Kruskal-Wallis and Xi2 test and a multivariate analysis using GEE for adjusting confounding factors such as age, BMI, AMH, previous oocyte retrievals, E2 at trigger, gonadotropin usage and use of oral contraceptives for scheduling purposes, were used for analysis.

RESULTS:

We included 3748 cycles utilizing various contraceptives including: IUD Cu (n=83), IUD Levonorgestrel<52mg (n=37), IUD Levonorgestrel 52mg (n=188), subdermal implant (n=14), injectable (n=11), vaginal ring (n=131), combined oral contraceptives (n=2104), patch (n=10), and controls (n=1170). Cohorts differed significantly in age, BMI, FSH, AFC, AMH, E2 at trigger, gonadotropin use, and follicles >18mmat trigger. While there was no difference in the median number of oocytes retrieved (p=0.55), there was a significant difference in the median number (p=0.04) and percentage of MII oocytes vitrified (p=<0.001) among cohorts. After adjusting for



confounders there was no association between any type of contraception and a lower percentage of oocytes vitrified compared to controls.

A subanalysis of hormonal contraception (n=2495) versus no hormonal contraception (n=1253) found no significant difference in the median number of oocytes retrieved (p=0.56) and MII vitrified oocytes (p=0.052). After adjusting for confounders, there was no association between the use of hormonal contraception and a lower percentage of vitrified MII oocytes (aOR 1.009, CI95% 0.9-1.08).

CONCLUSIONS:

Our study analysis found a significant difference in the percentage of vitrified MII oocytes among different types of contraceptive use. After adjusting for confounders, there was no association between the type of contraception and a lower percentage of vitrified oocytes compared to controls. Furthermore, our analysis found no significant association between the use of hormonal contraceptives and lower vitrified oocyte counts when compared with non-hormonal contraceptive methods.

IMPACT STATEMENT:

Various forms of contraception do not have a negative influence over the oocyte yield or maturation rate in patients undergoing oocyte cryopreservation.

REFERENCES:

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