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SPIRONOLACTONE USE AND OOCYTE MATURATION IN PATIENTS UNDERGOING OOCYTECRYOPRESERVATION

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OBJECTIVE:

Spironolactone is a pregnancy Category C drug often prescribed to reproductive age women to treat acne and hyperandrogenism. Recommendations are split between continuing or discontinuing spironolactone prior to controlled ovarian hyperstimulation (COH) due to the possibility of non-specific binding of progesterone and androgen receptors. This study aims to evaluate the relationship between spironolactone and oocyte maturation in patients undergoing oocyte cryopreservation.

MATERIALS AND METHODS:

This retrospective cohort study evaluated oocyte yield and maturation rates in patients with prior spironolactone use who underwent COH for oocyte cryopreservation at a single academic fertility center between 2011 and 2022. Exclusion criteria included a history of ovarian pathology, ovarian surgery, chemotherapy or radiation, and gender affirming testosterone therapy. Patients who continued spironolactone during COH were compared with patients who discontinued use and with a control group of spironolactone-naïve patients matched by age, body mass index (BMI), and anti-Müllerian hormone (AMH) levels. Secondary outcomes included the assessment of the effect of duration and dosage of spironolactone on oocyte cryopreservation outcomes. Statistical analysis was performed using a Wilcoxon Rank Sum test to compare nonparametric values and the Welch's t test for parametric values. A p-value < 0.05 was considered significant.

RESULTS:

161 patients reported spironolactone use. 105 patients continued treatment during their COH cycles, and 56 patients discontinued use prior to cycle initiation. Patients who continued spironolactone were matched with 315 controls without prior spironolactone use. Comparing patients who continued spironolactone to controls, there was no difference in the median

(interquartile range) number of oocytes retrieved (15 (13) v. 16.5 (9.2), p = 0.9) or mature oocytes vitrified (13 (10) v. 12 (11), p=0.4). There was no difference between patients who continued and discontinued spironolactone in the median number of oocytes retrieved (15 (13) v. 16.5 (9.2), p=0.9) or mature oocytes vitrified (13 (10) v. 12 (7.2), p=0.5).There was no difference in the dose of spironolactone between the sub cohorts that continued versus discontinued use, with a median daily dose of 100mg (p=0.4) for both groups. There was a nonsignificant association between dose of spironolactone and number of oocytes that were cryopreserved with R=0.029, p=0.15. Finally, there was no difference in peak estradiol or progesterone when comparing controls with the sub cohorts with prior spironolactone use (p > 0.05 for all comparators).

CONCLUSIONS:

There was no significant difference in oocyte yield and maturation rates between patients who continued spironolactone, patients who discontinued prior to cycle initiation, and patients with no prior use of spironolactone. This study suggests that patients may opt to continue spironolactone while undergoing oocyte cryopreservation.

IMPACT STATEMENT:

Patients can be reassured that the continued use of spironolactone while undergoing oocyte cryopreservation will not adversely impact oocyte yield and maturation.

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