Progestin Ovulation Suppression in Oocyte Cryopreservation Cycles Reduces Financial and Logistical Burden Without Compromising Yield

Linnea R. Goodman MD[1], Laura P. Smith MD[1], Scott Purcell PhD, HCLD[1], Christopher D. Williams MD[1]

[1]Virginia Fertility & IVF, University of Virginia, Charlottesville, VA

Background: In vitro fertilization has evolved over the past few decades but has consistently employed the same cornerstones: injectable medications to grow and mature ovarian follicles and additional medications to prevent premature ovulation of those follicles. There is an emerging trend of using oral progestins for ovulatory suppression.

Objective: To assess the efficacy, cost savings, and logistical burden of progestin for ovulatory suppression in oocyte cryopreservation compared to standard gonadotropin releasing hormone (GnRH) antagonist protocols.

Materials and Methods: At an academic-affiliated private practice, patients aged 18-43 years undergoing medroxyprogesterone acetate (MPA)-protocol for oocyte cryopreservation between April 2022-October 2023 were compared to age-matched antagonist control oocyte cryopreservation cycles. Data was prospectively collected during stimulation cycles for MPA cycles. The primary outcome was number of oocytes retrieved with secondary outcomes including number of monitoring visits required per cryopreservation cycle, cost savings and incidence of premature ovulation. Student's t-test and Mann-Whitney U tests were used as indicated with a p-value of <0.05 indicating statistical significance.

Results: 86 patients in the MPA group were compared to 86 antagonist control cycles. Age (36.8 +/- 4.4 vs. 36.7 +/- 5.6 years; p = 0.83) and AMH levels (2.1 +/- 2.3 vs. 2.4 +/- 1.7 ng/ml; p = 0.19) were similar between groups. There was no difference in cycle characteristics and the number of total and mature oocytes were similar between the MPA and control groups (Table 1). Notably, the number of office visits was significantly less in the MPA group (p<0.01) with an average of one less visit per cycle for the patient. The antagonist group averaged 5.3 daily doses of injectable GnRH antagonist and medication cost savings averaged $527/per cycle for the MPA group, with additional financial and logistical benefits afforded by one less clinic visit. There were no instances of premature ovulation in either group.

Table 1:

Cycle outcomes	**MPA (n= 86)**	**Control (n= 86)**	**P-value**
Days of Stimulation	10.5 +/- 1.5	10.7 +/- 2.4	0.87
Total FSH dose (IU)	4562 +/- 922	4691 +/- 1190	0.76
Max Estradiol level (pg/mL)	2380 +/- 1486	2524 +/- 1545	0.99
Number of visits required	4.4 +/- 0.8	5.5 +/- 1.1	<0.01*
Total oocytes retrieved (n)	10.5 +/- 7.3	10.9 +/- 6.4	0.83
Mature oocytes frozen (n)	8.0 +/- 5.2	8.1 +/- 4.7	0.76

Conclusion: For ovulatory suppression during oocyte cryopreservation cycles, the MPA-protocol demonstrated similar oocytes cryopreserved with the additional benefits of patient cost savings, increased convenience with decreased number of visits, and fewer injections.

Financial Support: None