GnRH AGONIST ONLY TRIGGERS ARE AS EFFECTIVE AS DUAL TRIGGERS IN THE PROGESTIN SUPPRESSED IVF PROTOCOL

Authors: Gilgannon LT[1], Loughran P[1], Smith LP[1,2], Williams CD[1,2], Goodman LR[1,2]

Affiliations:
[1]Department of OB/GYN, University of Virginia School of Medicine, Charlottesville, VA, USA
[2]Virginia Infertility and IVF, Charlottesville, VA, USA

Background
Use of a gonadotropin-releasing hormone agonist (GnRH-a) trigger alone to cause final oocyte maturation has decreased the incidence of ovarian hyperstimulation syndrome (OHSS). However, it has been postulated that dual trigger with GnRH-a and recombinant human chorionic gonadotropin (hCG) in the GnRH antagonist protocol improves IVF yield including the percentage of mature oocytes and usable embryos (1). Recently, oral progestins have gained popularity for ovulation suppression during IVF given their efficacy, cost-effectiveness, and increased convenience, but it has yet to be established if a dual trigger is superior to GnRH-a only in this protocol.

Objective
The goal of this study was to determine if dual trigger in the freeze-all, progestin-suppressed IVF protocol results in improved outcomes.

Materials and Methods
At an academic-affiliated private practice, data was collected prospectively on patients aged 18-44 years undergoing autologous medroxyprogesterone acetate (MPA) IVF cycles between January 2021- August 2024. Patients who received GnRH-a only triggers (those at higher risk of OHSS with estradiol (E2) values >4000pg/ml, >20 expected oocytes, and/or patients with comorbidities) were compared to those that received dual triggers with both GnRH-a and hCG (5000 or 10000 units). Primary outcomes were percentage of oocyte maturity and blastocyst/2PN. Student's t-test and Chi-squared test were used as appropriate between groups with $p<0.05$ considered significant.

Results
There were a total of 787 MPA cycles with 220 (28.0%) using GnRH-a only triggers. As expected, patients who underwent a cycle with GnRH-a only trigger were younger (33.3 +/- 4.5 years vs. 36.1 +/- 4.3 years; $p <0.01$) and had higher AMH values (6.2 +/- 5.1 vs. 1.9 +/- 1.8 ng/ml; $p <0.01$). Number of oocytes retrieved and blastocysts created were higher in GnRH-a only cycles, but percent oocyte maturity and blastocyst/2PN were similar between groups (Table 1).

Table 1	GnRH-a only (n = 220)	Dual Trigger (n = 567)	P-value
E2 (pg/ml)	5276 ± 2146	2109 ± 1046	<0.01
Oocyte (n)	24.5 ± 11.8	10.6 ± 7.0	<0.01
MII (n)	18.1 ± 8.7	8.0 ± 5.5	<0.01
2PN (n)	13.5 ± 8.1	6.2 ± 4.7	<0.01
Blastocysts (n)	7.4 ± 5.3	3.4 ± 3.1	<0.01
Euploid blastocysts (n)	3.7 ± 2.9	1.7 ± 2.1	<0.01
Oocyte maturity (%)	74.5 ± 13.5%	77.4 ± 20.0%	0.07
Blastocyst rate/2PN (%)	53.5 ± 23.6%	50.4 ± 30.9%	0.27

Conclusions

Dual trigger with GnRH-a and hCG during the progestin protocol did not improve IVF outcomes compared to a trigger with GnRH-a alone. This is reassuring to enable providers to be more liberal in the elimination of hCG as part of the trigger to decrease the risk of ovarian hyperstimulation syndrome in the progestin suppressed protocol.

Support

The authors did not receive any financial support for this study.

References

1. Hsia, LH, Lee, TH, Lin, YH, Huang, YY, Chang, HJ, & Liu, YL. (2023). Dual trigger improves the pregnancy rate in fresh in vitro fertilization (IVF) cycles compared with the human chorionic gonadotropin (hCG) trigger: a systematic review and meta-analysis of randomized trials. *Journal of Assisted Reproduction and Genetics*, *40*(9), 2063–2077. https://doi.org/10.1007/s10815-023-02888-8