

Adding letrozole to gonadotropins during ovarian stimulation for IVF results in a similar cumulative live birth rate at lower costs following a failed IVF cycle

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OBJECTIVE

To determine the reproductive benefits of adding letrozole to gonadotropins during controlled ovarian hyperstimulation (COH) in the patients who had a failed prior stimulated cycle using the GnRH antagonist protocol.

DESIGN, MATERIALS AND METHODS

This is retrospective monocentric study of 426 patients, with a prior failed stimulated IVF cycle using a GnRH antagonist protocol, who underwent a second cycle between 2012 and 2017.

In those patients, we studied the clinical outcomes of doing a repeated cycle, using the same protocol with the addition of 5mg of letrozole daily in the first 5 days of stimulation (Group A, N=213) versus doing a repeated similar cycle without letrozole (Group B, N=213). Groups A and B were matched for age, body mass index, anti-mullerian hormone and infertility diagnosis. The primary outcome was the cumulative live birth rate (CLBR).

RESULTS

	Group A	Group B	P value
Total dose of gonadotropins used (IU)	3468 (S.D. 1389)	4442 (S.D. 1657)	<0.001
Number of follicles >14mm on the day of hCG trigger	8.3 (S.D. 5.3)	9.2 (S.D. 4.6)	0.06
Number of mature oocytes (MII)	7.0 (S.D. 4.6)	8.2 (S.D. 5.0)	<0.01
Number of fertilized oocytes	4.1 (S.D. 3.6)	5.0 (S.D. 4.0)	<0.01
Number of utilizable embryos	1.82 (S.D. 1.6)	1.97 (S.D. 1.7)	0.31
Clinical pregnancy rates	23.5%	28.7%	0.22
Live birth rates (per embryo transfer)	16.9%	22.1%	0.17
Cumulative live birth rate (per stimulation cycle)	25.3%	27.8%	0.55

This is the first and largest study that investigates the effects of co-treatment with letrozole during COH for IVF in the category of patients who had a prior failed IVF cycle.

Our results show that patients who received letrozole during COH with gonadotropins, versus gonadotropins alone, had a significantly lower number of MII oocytes. However, despite that, they had a similar number of usable embryos, clinical pregnancy rates, live birth rates per embryo transfer and CLBR.

A 22% lower dose of gonadotropins was needed to achieve similar pregnancy outcomes in the letrozole group versus the control group, resulting in lower treatment costs

CONCLUSION

This study confirms that in women with a prior failed IVF cycle, co-treatment with letrozole results a similar cumulative live birth rate at a significant lower cost.