

# 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.