



OVO

CLINIQUE

Rescue IVF cycles after high response Gonadotropin/Letrozole IUI cycles compared to antagonist protocol in unexplained infertility

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INTRODUCTION

Conversion of IUI cycles into IVF in ovarian hyper-respondents patients is a viable option to avoid cycle cancellation, multiple pregnancy risk and patient's waste of time and money. Contradictory results about IVF vs. IUI as a first line treatment of patients with unexplained infertility exist. Letrozole used in combination with gonadotropins for ovulation induction in IUI cycles has been shown to be more cost-effective than gonadotropins alone with comparable pregnancy rates. We performed this retrospective cohort analysis to compare rescue IVF converted cycles due to excessive response to Gonadotropins/-Letrozole stimulation to IVF antagonist protocol in unexplained infertility patients.

METHODS

One hundred and ninety-two patients with unexplained infertility, attending **clinique ovo** (teaching tertiary fertility center affiliated with the University of Montréal) from August 2010 to January 2012 were included in the study. Seventy-three patients (group A) were converted from high response Gonadotropins/Letrozole IUI cycles to "rescue" IVF and 119 patients (group B) had antagonist IVF protocol. Primary outcomes included comparison of clinical and biochemical pregnancies rates among the two groups, secondary outcomes included comparison of: estradiol (E2) and progesterone levels, endometrial thickness, follicular size, retrieved oocytes number and implantation rates.

RESULTS

Both groups were comparable in terms of BMI, AMH and FSH basal levels. Women in group B were significantly older (31.8 vs. 34.4 years, $p < 0.01$) and had a longer duration of infertility (41.7 ± 24 vs. 58.3 ± 34 months, $p < 0.01$) (fig1). The number of follicles reaching 14mm on the day of HCG (8.02 ± 2.9 vs. 9.26 ± 5.4 , $p = 0.04$) and the E2 level (4819 ± 4047 vs. 9982 ± 5146 pg/ml, $p < 0.01$) was significantly higher in group B. As well the endometrial thickness was higher,

more oocytes were retrieved and more embryos were available in group B ($p < 0.05$). The progesterone on the HCG day, the number of frozen embryos and the implantation rates were comparable in both groups (fig2). Noteworthy, no difference were seen in terms of biochemical and clinical pregnancy rates between both groups (43% vs. 50%, $p = 0.39$) and (37% vs. 44%, $p = 0.34$) respectively (fig3).

CONCLUSIONS

Conversion of high responders Gonadotropin/Letrozole-IUI patients to rescue IVF has shown to be a good alternative to cycle cancellation with comparable clinical pregnancy rates to IVF antagonist protocol group in couple with unexplained infertility. Larger trials with adequate power are warranted.

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Fig. 1 - Patient's characteristics

	Group A N=73	Group B N=119	Valeur p
Age (years)	31.86 ± 3.81	34.43 ± 3.74	<0.01
BMI	25.54 ± 4.37	25.6 ± 3.81	0.95
Duration of infertility (months)	41.72 ± 23.98	58.35 ± 34.56	<0.01
AMH (ng/ml)	3.121 ± 2.198	2.48 ± 2.064	0.105
FSH (mIU/l)	6.26 ± 1.89	6.52 ± 1.53	0.36

Fig. 3 - IVF cycles outcomes

	Group A N=73	Group B N=119	Valeur p
Implantation rate	0.42 ± 0.5	0.5 ± 0.5	0.34
Biochemical pregnancy rate	0.43 ± 0.5	0.5 ± 0.5	0.39
Clinical pregnancy rate	0.37 ± 0.48	0.44 ± 0.49	0.34
Miscarriage rate	0.08 ± 0.29	0.167 ± 0.38	0.5

Fig. 2 - Cycle's characteristics

	Group A N=73	Group B N=119	Valeur p
Follicles 10-14mm on the HCG day	6.205 ± 3.9	7.37 ± 5.6	0.09
Follicles >14mm on the HCG day	8.03 ± 2.9	9.26 ± 5.4	0.041
E2 on HCG day	4819 ± 4047	9982 ± 5146	<0.1
PG on HCG day	2.72 ± 1.5	2.95 ± 1.4	0.32
Endometrial thickness on HCG day	9.92 ± 2.2	11 ± 2.3	<0.01
Number of oocytes retrieved	10.1 ± 5.32	13.55 ± 8.34	<0.01
Number of embryos	6.1 ± 3.94	7.47 ± 5.65	0.048
Number of frozen embryos	1.96 ± 2.04	2.37 ± 2.95	0.25