

OVULATION TRIGGER WITH LESS THAN 3 FOLLICLES IN STIMULATED IN-VITRO FERTILIZATION (IVF) CYCLES: A RETROSPECTIVE STUDY

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OBJECTIVE

In stimulated in-vitro fertilization (IVF) cycles, ovulation trigger is commonly performed in the presence of 3 or more dominant follicles. This minimal number is based on clinical experience as well as on strong literature, and reflects the probability of implantation and pregnancy versus the risk of not obtaining quality oocytes or reaching embryo transfer when fewer mature follicles are present (1, 2, 3).

This study aims to evaluate if triggering ovulation in a stimulated IVF cycle with only 2 dominant follicles or less (measuring 14 mm or more) results in pregnancy rates comparable to those obtained with 3 follicles (the currently used triggering threshold).

Table 1a: Demographic characteristics

	2 or less follicles (N=70)		3 Follicles (N=69)		
	Mean	SD	Mean	SD	p
Age (median, range)	39	30-45	38	29-43	
# Years infertility	Mean=4.0	SD=2.8	Mean=4.3	SD=3.4	
Gravida (median, range)	1	0-6	0	0-3	
Para (median, range)	0	0-3	0	0-3	
CAUSE OF INFERTILITY	#	%	#	%	p
Low ovarian reserve	65	92.9	57	82.6	0.07
Mal factor	24	61.6	32	46.3	0.74
Tubal factor	9	12.9	5	6.6	0.27
Endometriosis	7	10	1	1.4	0.06
Recurrent miscarriages	0	0	1	1.4	0.50
Unexplained	0	0	1	1.4	0.50
Other	1	11.1	3	4.3	0.37
Smoker	4	5.7	8	11.6	0.24

DESIGN

We performed a retrospective cohort study over 2 years (2011 to 2013) based on chart review on a population of patients followed at **clinique ovo** and the CHUM fertility clinics, affiliated to the University of Montreal.

MATERIALS AND METHODS

70 cycles triggered with 2 follicles or less were analyzed, versus 69 cycles with 3 follicles. The main outcome was clinical pregnancy rates. Secondary outcomes included implantation rates and spontaneous abortions.

Table 1b: Fertility treatment characteristics

	2 or less follicles (N=70)		3 Follicles (N=69)		
	Mean	SD	Mean	SD	p
AMH	Mean=0.4	SD=0.41	Mean=0.6	SD=0.58	
TOTAL DOSE GONADOTROPHINS (UI) (median, range)	5263	1200-12000	5400	1800-10200	
PROTOCOL	#	%	#	%	p
Long	1	1.4	3	4	0.37
Short	30	42.9	27	39.1	0.73
Antagonist	40	56	39	56.5	1

Table 2: Results (*statistically significant)

	2 or less follicles (N=70)	3 Follicles (N=69)	p
# of clinical pregnancies	1	6	
Clinical pregnancy rate (%)	1.4	8.7	0.06
# SA (spontaneous abortions)	3	6	
Rate of SA (%)	75	50	0.58
Implantation rate (%)	6	21	0.01*

RESULTS

The groups were identical in terms of age (39, range 30 to 45 versus 38, range 29 to 43), parity (0, range 0 to 3 versus 0, range 0 to 3), cause of infertility ($p>0.05$), AMH (0.4 ng/ml +/- 0.41 versus 0.6 +/- 0.58), stimulation protocol used ($p>0.05$), total dose of gonadotropins (5263 units, range 1200-12000 versus 5400 units, range 1800-10200), years of infertility (4 +/- 2.8 years versus 4.3 +/- 3.4 years) and smoking ($p=0.24$). Out of the 70 cycles triggered with 2 follicles or less, we only obtained one clinical pregnancy. The pregnancy rate in the 2 follicles or less group was less than in the 3 follicles group (1.4 versus 8.7%) although not statistically significant ($p=0.06$). However, the implantation rate was significantly lower in the 2 follicles or less group (6% versus 21%, $p=0.01$). The spontaneous abortion rate was higher in the group with 2 follicles or less, but not statistically significant (75 versus 50%, $p=0.58$).

CONCLUSIONS

Although not statistically significant, the extremely low clinical pregnancy rate obtained following a trigger with 2 follicles or less does not justify pursuing this practice. The higher implantation rate found in the 3 follicles group supports the use of this threshold in our practice. A larger sample would be necessary to increase power and reach statistical significance in the spontaneous abortions and clinical pregnancy rates.

REFERENCES

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