



More than 9 mm of endometrium thickness at the day of HCG triggering predicts better IVF outcomes of the patients with day 5 embryo transfer

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Objectives: The clinical IVF data is examined to correlate endometrium thickness at the day of HCG triggering with the outcomes of IVF cycles in the patients with day 5 blastocyst transfers

Design: Retrospective clinical data analysis

Setting: Private fertility center

Materials and methods

The IVF data of the patients (age from 24 to 42.2) enrolled in day 5 blastocyst transfer program in 2007 is pooled and subjected to statistical analysis with Graphpad Prism 5.

The patients were given various hormonal stimulation regimes. The endometrium thickness was measured at the day of HCG injection.

Retrievals were conducted 38 hours after HCG injection. Recovered eggs were fertilized with ICSI or insemination depending on the parameters of sperm analysis. The embryos were cultured with the sequential media in 5% O₂, 6% CO₂ at 37 °C for 5 days.

Good quality of blastocysts were selected for intrauterine transfer under the ultrasonic guidance. The pregnancies were detected by the levels of HCG at the day 11-12 following embryo transfers and further confirmed weeks later by fetal heart beats.

The patients were grouped according to the thickness of endometrium, various endpoints (listed in the table) were compared among the different groups. The difference of percentage data was examined by Fisher's exact test and means were analysed by students T test.

Results

Endometrium thickness (mm)	7.5(3.2-8.9)	10.4(9-11.8)	13(12-17)	P value
No. of patients	28	60	35	
Ages	32.4(28-41)	31.4(24-42)	34(25-42.2)	
Days of stimulation	9.9	9.6	9.3	
E2 levels (pmol/l)	12959	12451	13581	
No. of oocytes recovered	13.7(383/28)	14.5(870/60)	14(490/35)	
No. of MII oocytes	12(336/28)	12(720/60)	12.3(430/35)	
No. of 2 PN zygotes	9.5(266/28)	9.3(558/60)	9.9(346/35)	
No. of 8-16 cells	7.4(207/28)	6.7(402/60)	6.6(231/35)	
No. of blastocysts	5(140/28)	5.2(312/60)	4.6(161/35)	
No. of embryos transferred	2.1(59/28)	2.1(126/60)	2.2(77/35)	
% of HCG positives	39.3(11/28)*	75(45/60)	68.6(24/35)	0.002
% of gestational pregnancies	25(7/28)*	60(36/60)	57.1(20/35)	0.003
% of implantation	18.7(11/59)*	42.9(54/126)	42.9(33/77)	0.001

Data with * are statistically different ($p < 0.05$)

Conclusions

The patients with above 9 mm of endometrium at the day of HCG triggering resulted in better IVF outcomes with day 5 blastocyst transfers. Endometrium thickness is a critical parameter for predicting the outcomes of an IVF cycle of day 5 blastocyst transfer.

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