

IMPACT OF ENDOMETRIAL COMPACTION ON PREGNANCY OUTCOME IN WOMEN UNDERGOING FRESH EMBRYO TRANSFER AFTER GONADOTROPHIN ANTAGONIST STIMULATION PROTOCOL

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INTRODUCTION

During the phase of receptivity, the endometrium under goes morphological, cytoskeletal, biochemical, and genetic changes to become functionally competent. The endometrium is unique in its ability to block embryos from implanting, except during this narrow window of receptivity. Endometrial assessment has been performed usually by endometrial biopsy. However, such an invasive method is not acceptable. Therefore, endometrial receptivity should be ideally evaluated before implantation by a non-invasive method. Transvaginal ultrasonography may represent, theoretically, such an ideal non-invasive technique. It was suggested that pregnancy outcome is closely related to decreased endometrial thickness (endometrial compaction). It is hypothesized that the change in endometrial thickness between the day of trigger and the day of embryo transfer may be more important to predict pregnancy outcome than the absolute measure of endometrial thickness at the time of embryo transfer.

AIM OF THE WORK

The aim of this study was to evaluate impact of endometrial compaction from day of trigger to day of embryo transfer on pregnancy outcomes in patients undergoing intracytoplasmic sperm injection consist of fresh embryo transfer after ovarian hypers stimulation using antagonist protocol.

SUBJECTS AND METHODS

This is prospective observational cohort study will be carried out on 82 infertile women attending IVF-ICSI unit of Alexandria IVF-ICSI centers and went through gonadotrophin antagonist ovarian stimulation protocol. Endometrial thickness is precisely measured by transvaginal ultrasonographic probe on the day of human chorionic gonadotropin trigger administration and day of embryo transfer. Oocyte retrieval will be performed 35-36 h after hCG injection by transvaginal ultrasound guided single lumen needle aspiration. Day 5 fresh embryo transfer will be performed under ultrasound guidance. The results of endometrial thickness at the day of human chorionic gonadotropin triggering and day of embryo transfer will be compared.

RESULTS

Table 1: Comparison between the two studied groups according to outcome

	Outcome	Total (n = 82)		Group A Not compacted (n = 40) #		Group B Compacted (n = 42) #		χ^2	p
		No.	%	No.	%	No.	%		
Primary outcome	No of embryo transferred	132		66		66			
	Number of intrauterine sac	77		32		45			
	Implementation rate	77 / 132		32 / 66		45 / 66		5.268*	0.022*
		(58.3%)		(48.5%)		(68.2%)			
	Clinical pregnancy								
Secondary outcome	Negative	25	30.5	14	35.0	11	26.2	0.750	0.386
	Positive	57	69.5	26	65.0	31	73.8		
	Ongoing pregnancy								
	Negative	31	37.8	18	45.0	13	31.0	1.719	0.190
	Positive	51	62.2	22	55.0	29	69.0		
	Miscarriage								
	No abortion	76	92.7	35	87.5	41	97.6	3.093	FEp= 0.150
	Abortion	6	7.3	5	12.5	1	2.4		

Table 2: Comparison between the two studied groups according to progesterone

Progesterone	Total (n = 82)	Group A (non-compacted) (n = 40) #	Group B (compacted) (n = 42) #	U	p
P4 day of trigger					
Min. – Max.	0.10 – 1.60	0.10 – 1.25	0.20 – 1.60	790.50	0.645
Mean ± SD.	0.70 ± 0.36	0.71 ± 0.34	0.69 ± 0.37		
Median (IQR)	0.65 (0.40 – 0.90)	0.60 (0.41 – 1.04)	0.70 (0.40 – 0.90)		
P4 day of embryo transfer					
Min. – Max.	53.50 – 307.0	53.50 – 301.0	56.90 – 307.0	829.0	0.919
Mean ± SD.	145.36 ± 56.54	144.62 ± 61.40	146.07 ± 52.23		
Median (IQR)	146.50 (97.3 – 176)	146.50 (87.8 - 183)	146.50 (114 - 167)		

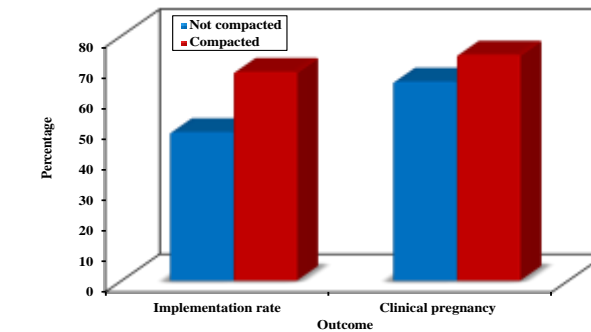


Figure 1: Comparison between the two studied groups according to outcome.

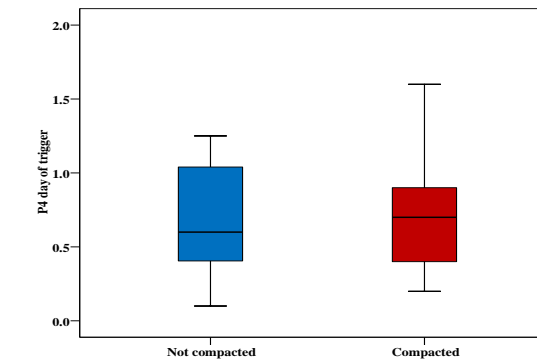


Figure 2: Comparison between the two studied groups according to P4 day of trigger.

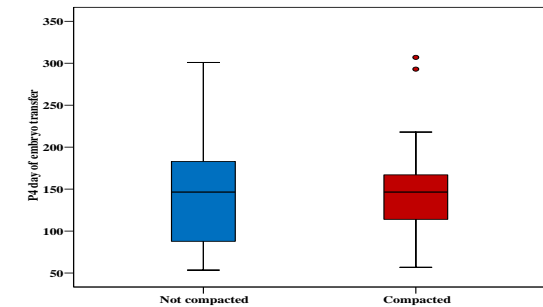


Figure 3: Comparison between the two studied groups according to P4 day of embryo transfer.

CONCLUSION

- There is significant correlation between endometrial lining compaction and implantation rate in patients undergoing intracytoplasmic sperm injection consist of fresh embryo transfer after ovarian hyperstimulation using antagonist protocol.
- There is non-significant correlation between endometrial lining compaction and ongoing pregnancy rate in patients undergoing intracytoplasmic sperm injection consist of fresh embryo transfer after ovarian hyperstimulation using antagonist protocol.