



EVALUATION OF CLINICAL & EMBRYOLOGICAL FACTORS INFLUENCING PREGNANCY OUTCOMES IN THE FIRST FROZEN BLASTOCYST TRANSFER: A RETROSPECTIVE STUDY, IN IVF HUNG VUONG.



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Problem statement:

At present, blastocyst transfer is an efficient embryo transfer method associated with satisfactory pregnancy outcomes, and performing blastocyst transfer may have benefits. The aim of this study was to investigate which factors contribute to the incidence of clinical pregnancy rate (CPR) in the first frozen blastocysts transfer.

Methods:

In this study, we analyzed the data from 342 women who were subjected to the first frozen blastocyst transfer registered from Jan 2017- Dec 2018 at the IVF Hung Vuong, Ho Chi Minh city, Viet Nam. Baseline data and pregnancy outcomes were collected. We performed a retrospective analysis of clinical and embryological factors that potentially influence the outcome of the first frozen blastocyst transfer.

Results:

The outcome of 342 cycles in our analysis was the clinical pregnancy rate and ongoing pregnancy rates after the first frozen blastocysts transfer was 52.3 % and 38.3 %. Age, type of infertility, IVF indications, AMH, ovarian stimulation response (numbers of follicles, oocytes and mature oocytes), endometrial thickness, embryo transfer distance) were similar in the success and failure groups. The study recorded fertilization rate and blastocysts rate in the success were higher in failure group but not significantly different ($p > 0.05$). The number of blastocyst in first transfer (single versus double) resulted in a significantly higher CPR [40.7% versus 52.7%; odds ratio (OR) 1.63, 95% confidence interval (CI) 1.02–2.62]. Similarly, No. of good quality blastocyst transfer resulted in a significantly [OR 2.19, 95% CI (1.41 - 3.41)] higher CPR compared with the group without good blastocyst transfer. As expected, the multiple pregnancy rate was significantly lower for single blastocyst transfer compared with double blastocyst transfer [OR 4.63 CI (1.61 - 13.35)].

Conclusion:

The number and the good quality of the blastocyst transferred significantly influences clinical pregnancy rate in the first transfer. In general, consideration should be given to the transfer of blastocyst stage embryos. Limiting the number of transferred embryos can be reduced the multiple pregnancy rate.

Table 2: Descriptive analysis of patient embryological characteristics.

	Clinical Pregnancy		OR (95% CI)
	Positive	Negative	
Oocytes retrieved	20.1 (8.7)	19.8 (8.5)	1.00 (0.98 - 1.03)
MII oocytes	17.3 (7.5)	16.6 (7.3)	1.01 (0.98 - 1.04)
Fertilisation rate	13.9 (6)	13.7 (5.9)	1.01 (0.97 - 1.05)
Blastocyst rate	1.8 (1.5)	1.6 (1.7)	1.10 (0.95 - 1.26)
No. of blastocysts transfer			
1	41 (24.7)	60 (34.3)	1
2	125 (75.3)	112 (64)	1.63 (1.02 - 2.62)
No. of good blastocysts			
0	61 (37)	100 (56.8)	1
1	95 (57.6)	71 (40.3)	2.19 (1.41 - 3.41)
2	9 (5.5)	5 (2.8)	2.95 (0.95 - 9.21)

Table 3: Comparison of clinical outcome of frozen single embryo transfer vs double embryos transfer.

	No. of blastocysts transfer		OR (95% CI)
	1	2	
Pregnancy rate (positive HCG)	45 (44.6)	134 (56.5)	1.62 (1.01 - 2.59)
Clinical pregnancy rate	41 (40.6)	125 (52.7)	1.63 (1.02 - 2.62)
Ongoing pregnancy rate	30 (29.7)	101 (42.6)	1.76 (1.07 - 2.89)
Multiple pregnancy rate	4 (4)	38 (16)	4.63 (1.61 - 13.35)

Table 1 : Descriptive analysis of patient demographical characteristics.

	Clinical Pregnancy		p	OR (95% CI)
	Positive	Negative		
Age	32 (4.9)	31.9 (4.5)	0.777	1.01 (0.96 - 1.05)
Type of infertility				
Primary	45 (27.1)	50 (28.4)	0.788	0.94 (0.58 - 1.51)
Secondary	121 (72.9)	126 (71.6)		1
IVF indications				
Ovulation disorder	46 (27.7)	66 (37.5)	0.054	0.64 (0.4 - 1.01)
Tubal	21 (12.7)	23 (13.1)	0.908	0.96 (0.51 - 1.82)
Adenomyosis	1 (0.6)	4 (2.3)	0.372	0.26 (0.03 - 2.36)
Diminished ovarian reserve	21 (12.7)	13 (7.4)	0.104	1.82 (0.88 - 3.76)
Male factor infertility	40 (24.1)	42 (23.9)	0.96	1.01 (0.62 - 1.66)
Unexplained	36 (21.7)	33 (18.8)	0.499	1.2 (0.71 - 2.04)
Others	10 (6)	11 (6.3)	0.931	0.96 (0.4 - 2.33)
AMH (ng/mL)	5.7 (4.3)	5.4 (3.5)	0.432	1.02 (0.97 - 1.08)