單一植入一個優質囊胚的臨床結果不遜於同時植入一個優質和一個次級囊胚

The clinical outcomes of transfer only one good embryo are no poor than transfer two embryos with good and moderate quality.

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Study Question: The aim of this study is to compare the clinical outcomes of frozen embryo transfer (FET) with only one good quality embryo or two combined quality embryos.

Study Design, Size, and Duration: This retrospective data analysis included FET with one or two blastocysts from Jan 2015 to Jan 2017 in our hospital.

Materials, Setting, Methods:

Two hundred and forty FET cycles were retrospectively included in this study. The quality of the frozen-thawed blastocyst was evaluated according to the Gardner's grading system after overnight culture. Patients were divided into four groups according to the transfer embryo number and grading. The first part, Group ≤B3 included patients who received one or two embryos with grading were less than grade 3 expansion. And Group B4, B5, B6 included patients who received one or two embryos with grading were grade 4, 5, 6   expansion, respectively (table 1). The secondary part: Group 1 (G1) included patients who received single embryo transfer (SET) with embryo grading was less than 3BB. Group 2 (G2) included SET with grading was higher than 3BB. Group 3 (G3) included double embryos transfer (DET) with one embryo grading was higher than 3BB, and the other was less than 3BB. Group 4 (G4) included DET with grading both were higher than 3BB (table 2). Clinical outcomes were compared among four groups. Two-sample t-test and Fisher's exact tests were used for statistical analyses.

Table 1	≤B3	B4	B5	B6	total	p value
clinlic prengancy rate (%)	4/20 (20.0)	45/94(47.9)	63/106 (59.4)	9/19 (47.4)	121/239 (50.6)	0.011*
miscarrage rate (%)	1/4(25.0)	14/45 (31.1)	19/63 (30.2)	0/9 (0)	34/121 (28.1)	0.245
implantation rate (%)	4/29 (13.8)	48/168 (28.6)	70/199 (35.2)	11/31(35.5)	133/427 (31.1)	0.095
live birth rate (%)	3/20 (15.0)	31/94 (33.0)	44/106 (41.5)	9/19 (47.4)	87/239 (36.4)	0.085

Table 2	SET		DET			
	G1 ≤3BB	G2 >3BB	G3 combined	G4 both>3BB	total	p value
clinlic prengancy rate (%)	0/11 (0)	13/40 (32.5)	23/49(47.0)	82/131(62.6)	118/231(51.9)	<0.001***
miscarrage rate (%)	0/0 (0)	1/13 (7.7)	6/23 (26.1)	27/82 (32.9)	34/118 (28.8)	0.164
implantation rate (%)	0/11 (0)	13/40 (32.5)	26/98 (26.5)	91/262 (34.7)	130/411 (31.6)	0.059
live birth rate (%)	0/11 (0)	12/40 (30.0)	17/49 (34.7)	55/131 (42.0)	84/231 (36.4)	0.032*
twin pregancy rate (%)	0/0 (0)	0/13 (0)	5/23 (21.7)	22/82 (26.8)	27/118 (22.9)	0.075

Main Results:

The average age of total patients is 36.02±5.10 years old and there is no statically significantly difference among four groups. The clinical pregnancy is 59.4% in Group B5, significantly higher than other group ($P<0.05$)(table 1). Although the clinical pregnancy rate is significantly higher in G3 than G2 (47.0% vs. 32.5%, $P<0.001$), the live birth rate is similar (34.7% vs. 30.0%)(table 2). Besides, the twin pregnancy rate is much higher in G3 than G2 (21.7% vs. 0%). The clinical pregnancy and live birth rate are the significantly highest in G4 [62.6%, $P<0.001$; 42.0%, $P<0.05$], and the twin pregnancy rate is also higher than other groups (26.8%, no significantly difference).

Conclusion: SET with one good quality embryo can reach the same live birth rate but twin pregnancy rate is zero comparing to DET with combined quality embryos. Although DET with two good quality embryos have the highest live birth rate, higher twin pregnancy rate is following. Our data revealed SET with good quality embryo can result an acceptable live birth rate and avoid multiple pregnant.