Pregnancy Rate of Frozen Embryo Transfer Patients and Related Factors

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Introduction

As an embryo transfer method, Frozen Embryo Transfer (FET) offers more advantages than Fresh Embryo Transfer (ET) because the process does not require ovulation induction. Many researchers have compared the success rate of FET and ET with various results. Some studies indicate significant difference, while others suggest the opposite. The purpose of this research is to compare the pregnancy success rate of patients using FET and ET methods in Indonesia.

Methods

This research is a retrospective cohort study which uses 288 medical records from the Department of Obstetrics and Gynecology at Cipto Mangunkusumo National Hospital. The 144 data samples for each group are determined after the implementation of *systematic random sampling* and exclusion process. Pregnancy is measured using HCG level ≥ 50 mIU/mL. The data are then analyzed with the addition of chi-square test to determine the correlation between the type of embryo transfer and pregnancy success rate. Additionally, multivariate analysis with logistic regression method is used to analyze the factors affecting the pregnancy success rate.

Results

In both groups, most of the patients are over age 35 (55,6% and 62,5%), while the most common endometrium thickness is less than 10.95 mm (59% and 66,7%). Meanwhile, the number of patients with certain infertility etiology is similar in both groups.

Research results indicate that the pregnancy rate of FET (39.6 %) is higher than the pregnancy rate of ET (38.2%). However, the result is not significant statistically ($p=0.809$).

The result of the multivariate analysis concludes that ovarian problem is the most influential factor in the pregnancy success rate with p value of 0.005 and OR value of 2.444. Other factors which have significant effects on pregnancy success rate are male infertility factor ($p=-0.004$ and $OR=2.315$) and the decrease of ovarian reserve (DOR) ($p=0.015$ and $OR=0.144$)

Conclusion

it was concluded that the pregnancy success rate of patients treated with *Frozen Embryo Transfer* (FET) method is 39.6%. Additionally, there is no significant difference in pregnancy success rate between FET and ET. This research also finds that the three confounding factors which have significant effects on pregnancy success rate are male infertility problems, ovarian problems, and the decrease of ovarian reserve (DOR).

Characteristic

Age ≤ 35

Endometrium thickness < 10.95 mm

Frozen Embryo Transfer ($p = 0.809$)

Etiology

Ovarian problem ($p: 0.005$, OR: 2.444)

Male infertility ($p = -0.004$ OR 2.315)

Decrease of ovarian reserve ($p = 0.015$, OR = 0.144)

Pregnancy

Discussion

Etiology

Quality transferred embryo

Quality transferred embryo

Pregnancy success rate

Frozen Embryo Transfer

Fresh Embryo Transfer

Not significant (Aflatoonian. et al)

Significant (Zhu, et al)

The multivariate analysis generates equations formulas:

$$y = \text{constant} + a_1 \times 1 + a_2 \times 2 + a_3 \times 3$$
$$y = -0.678 + 0.840 (\text{male infertility}) + 0.894 (\text{ovarian problems}) - 1.152 (\text{DOR})$$

References

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