P-626 A freeze-all strategy improves clinical pregnancy rate in patients with few available embryos

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Study question: Is elective frozen blastocyst transfer an advantageous strategy for all patients?

Summary answer: A freeze-all strategy improves the outcomes in patients with few available embryos.

What is known already: With the aim of defining the best moment to perform embryo transfer, in recent years, relevance has been given to the understanding of the implantation window, however oocyte and embryo quality are key factors that are not to be disregarded.

It has been suggested that a freeze-all strategy and subsequent frozen embryo transfers improve pregnancy rates. However, it is unclear whether this strategy benefits all kind of patients (i.e. with or without surplus embryos, etc).

In this study, we aim to provide an answer on which patients may benefit of a freeze-all policy and a subsequent frozen embryo transfer.

Study design, size, duration: This retrospective cohort study includes infertile patients aged 21 to 44 years old, without previous history of recurrent failure of ART (including recurrent miscarriages). Enrolments took place between January 2015 and November 2019 and cycles with oocyte donation and PGT were excluded. Embryo transfers were performed in: 1) a fresh cycle (ET) or 2) a deferred cycle with surplus frozen embryos (FET) or embryos that were frozen in a freeze-all policy (FET-FA).

Participants/materials, setting, methods: Patients with blastocysts transfer were included. PGT cycles were excluded.

The number of cycles complying with the inclusion criteria were: 617 ICSI cycles. Fresh embryo transfers (ET) were performed in 396 cycles (43 with a subsequent Frozen embryo transfer, FET). Frozen embryo transfers following a freeze-all strategy (FET-FA) were performed in 221 cycles.

Clinical pregnancy rates (CPR) and Cumulative clinical pregnancy rates (CCPR) were calculated and compared among those groups.

Main results and the role of chance: Mean age of patients was 36.1 ± 3.7 years old (mean ± SD). In average, 1.83 ± 0.41 (mean ± SD) embryos were transferred.

Following the first transfer (either ET and FET-FA), CPR was 40.4% and 58.4% (ET and FET-FA, respectively). Following the subset analysis of 2 age groups (≤38 & >38 years-old); in the ≤38-group, CPR was 45.2% and 58.9% (ET and FET-FA, respectively), while in >38-group, the rates were 30.8% and 54.8% (ET and FET-FA, respectively); $p<0.05$. CCPR were also significantly better in the FET-FA group: 51.3% vs 66.8% and 33.8% vs 58.1% in the ≤38-group and >38-group, respectively.

Additionally, CPR was analysed independently for patients with ≤2 usable embryos (1 attempt) or ≥3 usable embryos (surplus embryos after first attempt).

When a single attempt was possible; in the ≤38-group, CPR was 36.1% and 56.9% (ET and FET-FA, respectively) while in the >38-group, the rates were 24.7% and 63.6% (ET and FET-FA, respectively); $p<0.05$. When surplus embryos were available, no difference in CPR (or CCPR) between ET and FET-FA groups were observed. After first attempt CPR were 58.4% and 48.2% in the ≤38-group & >38-group, respectively; while CCPR were 69.8% and 57.1% in the ≤38-group & >38-group, respectively.

Limitations, reasons for caution: Although the authors consider that the patient population is of optimal size, a detailed analysis of the stimulation protocol and hormonal values (estradiol and progesterone) during treatment, and its potential relation to the outcomes, should follow.

Wider implications of the findings: In our setting, the data suggests that freeze-all strategy (with subsequent frozen embryo transfer) over fresh transfer is advantageous for patients with few available embryos (1 or 2 embryos for a single attempt). This increases the chances to pregnancy in 30.3% in the ≤38-group and 77.9% in the >38-group.

Trial registration number: Not applicable