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Two-step consecutive embryo transfer: a new therapeutic strategy for recurrent ET failures.

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Objective: To evaluate the effectiveness of three kinds of ETs using two embryos (two-step ET, blastocyst ET, and cleavage ET), their pregnancy rates (PR), implantation rates (IR), and multiple pregnancy rates (MPR) were compared.

Materials and methods: This is a retrospective cohort study. The study includes 400 cycles of two-step ET, 52 cycles of double blastocyst ET (DBT), and 1471 cycles of double cleavage embryos transfer (DET). Eleven hundred seventy-nine women aged 25-50 had IVF because of various infertile reasons at a private reproduction clinic. All ETs were performed using frozen-thawed two embryos during hormone replacement cycles. The two-step ET consists of single blastocyst transfer on day 5 and single cleavage ET on day 2 or 3 in same cycle.

Results: The PR was as follows; 48.5%/ 46.2%/ 25.2% in two-step/ DBT/ DET. The IR was 29.0%/ 31.7%/ 14.5% respectively. The MPR was 19.6%/ 37.5%/ 15.1%. The PR and IR were higher in two-step ($p=0.001$, $p<0.001$) and DBT ($p<0.001$, $p<0.001$) compared with those of DET group. However, average age (40.5) of the DET group was higher than that of other groups (37.7 and 36.7). The analysis of patients under 40 years showed the PR was 57.6%/48.8%/41.6% in two-step (n=250)/ DBT (n=41)/ DET (n=512). The MPR under 40 was 22.2%/ 45.0%/ 18.3%. The MPR under 40 tended to be lower in two-step compared to that of DBT ($p=0.0538$).

Conclusion: The pregnancy rate and the implantation rate of two-step ET were as high as double blastocyst transfer, without increasing multiple pregnancy risk.