CRYO-PRESERVING EMBRYOS AT THE 2-PN OR CLEAVING STAGE: WHAT IS BEST FOR WHOM?
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Introduction: Cryopreservation of excess embryos reduces multiple pregnancies, while preserving ART efficacy. Cryopreservation of 2-PN embryos is more effective, but by allowing for embryo selection, freezing at the cleaving stage (CL) optimizes fresh transfers, a procedure however forbidden by Swiss law.

We compared outcomes of freezing at 2-PN in Switzerland (LSN) and CL stages in France (CHN) in otherwise ART similar programs.

Materials and methods: Retrospective analysis of 668 retrievals in 2009, and thawing cycles in 2009-2010, assessing oocyte maturity (MR), fertilization (FR), clinical pregnancies (cPR), birth (bPR) and implantation (IR) rates, embryo freezing rate per oocyte (EFR/o) and women (EFR/w) after fresh (FT) and thawed transfers (TT).

Results: Women’s ages were similar but more oocytes were retrieved in LSN (12.6 vs. 9.9, p=0.01). FT occurred more frequently in CHN (91.2% vs. 81.8%; p=0.01). MR and FR were similar. cPR and bPR following FT were higher in CHN (34.8% vs. 24.2%; p=0.04 and 29% vs. 18.3%; p=0.04). EFR and TT rates were higher in LSN (42.6% vs. 17.6%, p=10^-8 and 97% vs. 89.8%, p=0.01). Despite improved survival following thawing in LSN (82.6% vs. 77%, p=0.04), PR and IR after TT were similar. Ultimately, bPR per woman were equal. The cumulative cPR and bPR were similar. Finally, the number of transfers needed per childbirth was higher in LSN (2.3 vs. 1.4, p=0.001).

Conclusion: The study confirms the better embryo survival following 2-PN cryopreservation. However, this policy, which leads to 40% more TT on average, is expensive and should be reserved for when hyperstimulation is feared or fertility preservation is sought.