

ASSOCIATION BETWEEN POST-WARM EMBRYO DEVELOPMENT AND CLINICAL PREGNANCY IN VITRIFIED-WARMED EMBRYO TRANSFER CYCLES

Hong, Yeon Hee¹; Lee, Jang Mi¹; Kim, Seul Ki¹; Youm, Hye Won¹; Jee, Byung Chul¹; Kim, Seok Hyun²

¹Seoul National University Bundang Hospital, ²Seoul National University Hospital

Objective: To investigate the correlation between post-warm embryo development and clinical pregnancy in the frozen embryo transfer (FET) cycle. **Methods:** The mean embryo score (MES) at the time of freezing and right before ET was calculated in the cleavage (69 cycles) and the blastocyst stage (58 cycles) from February 2011 to March 2018. Δ MES (MES difference between at the time of ET and freezing, designated by post MES-pre MES), Δ MES / pre MES, Δ TQES (difference in top quality embryo score, ES difference between the ET and freezing point of one embryo with the highest ES) were compared between the non-pregnant and the pregnant group. Based on the Steer method in the cleavage stage and the Gardner's in the blastocyst stage, we modified them in the way used in the lab. The cleavage embryo score was calculated as the cell number x grade. The blastocyst quality score was calculated as expansion x ICM x TE. **Results:** For both cleavage and blastocyst stage, there was no difference in Δ MES, Δ MES / pre MES and Δ TQES between the two groups. However, post MES and Post TQES just before ET were significantly higher in pregnant group in the blastocyst stage (29.5 vs. 32.5, $p=0.012$, 12.0 vs. 13.5, $p=0.027$). In the ROC curve for the prediction of pregnancy, no significant cutoff value was found in the cleavage stage. In the blastocyst stage, Δ MES more than 10.0 can predict the pregnancy with the sensitivity 0.773 and specificity 0.500 at AUC 0.638. However, it was not statistically significant. (95% CI 0.492-0.785) **Conclusion:** The degree of embryo development before and after warming does not seem to affect the clinical pregnancy. The final embryo development right before ET seems to be more related to pregnancy, though p-value was not significant in the blastocyst FET cycle in our study.