

ESTIMATION OF REPRODUCTIVE SUCCESS ACCORDING TO AGE, NUMBER OF OOCYTES OR INDICATION: ELECTIVE OR ONCOLOGICAL FERTILITY PRESERVATION (FP) PATIENTS.

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Objective: To evaluate the impact of age, indication=reason for FP: elective (EFP), and oncological FP (onco-FP) and number of oocytes vitrified on oocytes survival and live birth rates.

Design: Retrospective analysis.

Materials and Methods: A total of 392 (EFP), 58 (onco-FP) patients returning to use their oocytes were included. A binary logistic regression (LR) analysis was employed to measure the impact of age (stratified in four groups: ≤ 30 ; 31-35; 36-40; and ≥ 41 y) and indication on survival rate. Binary survival was considered as $\geq 90\%$ and $< 90\%$. Adj. OR were calculated combining age and indication. Kaplan-Meier plotting considering the number of oocytes consumed was used to evaluate the cumulative live birth rate (CLBR) according to ages ≤ 35 and ≥ 36 y and indication. Long Rank (Mantel-Cox), Breslow (Generalized Wilcoxon) and Tarone-Ware overall comparisons were performed (statistical significance $P < 0.05$).

Results: Survival rate was 93.3, 90.2, 81.7 and 80% according to age groups respectively in EFP ($P < 0.05$). Survival rate was 93.8, 80, 80.1 and 82.2% in onco-FP ($P < 0.05$). In the EFP group, the CLBRs were statistically different for all ages (93.7, 46.5, 20.4 and 4.2%; $P < 0.05$). CLBR in the onco-FP group were 40.0, 30.8, 30.4 and 0% (NS). The OR for survival in EFP vs. onco-FP adjusted by maternal age was **0.794** (95%IC=0.440-1.434) suggesting that the indication does not impact the survival rate. However, when considering age and indication, statistical differences were observed for all age groups: adj. OR for SV in ≤ 30 ; 31-35; 36-40 vs ≥ 41 y were 6.997 (95%IC 2.138-2.895); 2.939 (95%IC 1.413-6.114); and 2.178 (95%IC 1.154-4.109). KM plotting showed comparable CLBR in EFP vs onco-FP according to oocytes consumed (NS). Overall comparisons according to age (≤ 35 vs ≥ 36 y) showed statistical differences in both indications ($p < 0.05$). In EFP, with 8 oocytes used in the ≤ 35 group, CLBR was 30.9% (95%IC 19.1-42.7) vs 11.2% (95%IC 6.9-15.5) for ≥ 36 group ($p < 0.05$). The gain in CLBR per oocyte used was higher and increased more rapid in younger patients. No differences were observed in the onco-FP group, however wider 95%CI were observed in both groups.

Conclusion: Age impacts survival and CLBR in both FP groups. No impact of the indication was demonstrated. According to KM plotting a reliable forecast of the reproductive outcome (take home baby rate) depending on the number of oocytes retrieved could be provided to our patients.