KAPLAN-MEIER ANALYSIS OF CUMULATIVE ONGOING PREGNANCY RATE WITH VITRIFIED DONOR OOCYTES TO ESTIMATE COST EFFECTIVENESS OF "ASSURED REFUND" PLANS.

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Background: There is a paucity of data regarding cumulative sustained implantation rates from embryos originating from vitrified donor oocytes obtained through commercial egg banks. Egg banks often offer purchase of individual oocyte lots or "assured refund" (AR) plans which cost a premium to provide a refund if a live birth is not achieved by a fixed number of transfers.

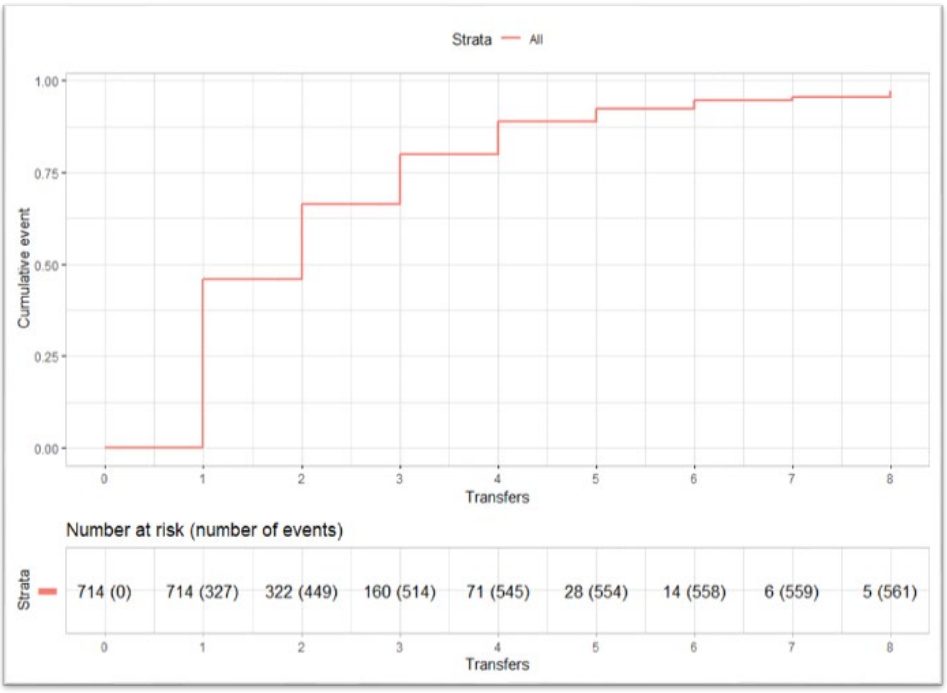
Objective: Determining cumulative sustained implantation rate (SIR) to elucidate efficacy and help estimate the cost effectiveness of donated vitrified oocytes.

Materials & Methods: Kaplan-Meier analysis was performed to determine the cumulative SIR for patients who purchased vitrified donor oocytes and underwent a frozen single embryo transfer (SET) from December 13, 2015- September 30, 2022. Censorship occurred if sustained implantation beyond 20 weeks was not achieved within the study period and the patient did not have any remaining embryos to transfer.

Results: A total of 1832 transfers in 714 patients from 3 different donor egg banks were analyzed.

The AUC representing sustained implantation with successive transfers was as follows: 1) 0.458, 2) 0.663, 3) 0.80, 4) 0.887, 5) 0.923, 6) 0.945, 7) 0.955, 8) 0.973.

The median number of blastocysts per egg lot from all banks was 2 (IQR: 2-3); thus 66.3% of patients achieved sustained implantation with 1 oocyte lot, while 33.7% of patients required more than 1 oocyte lot.



Conclusions: Sustained implantation rates from vitrified donor oocytes are favorable with most patients achieving success with a single egg lot. Within six transfers approximately 95% of patients achieved sustained implantation.

In our program, costs for a single lot (L) includes the oocytes, lab procedures, and first transfer, but not for medications (M) or additional SET (T). For the number of transfers (N) and the number of lots (n), the total costs can be calculated:

Total = (L x n) + (M x N) + (T x (N-n))

Our AR (A) programs include the costs of the oocytes and all transfers, but not medication. Thus, the total costs for N transfers with the AR programs are calculated as such:

Total = A + (M x N)

Therefore, for a live birth achieved in N transfers, the cost effectiveness can be estimated by the ratio of the formulas as such:

[A + (M x N)] / [(L x n) + (M x N) + (T x (N-n)]

A proportion <1 indicates relative value of the AR program, while >1 indicates that individual lot purchase is of better value. Cost effectiveness is influenced by the number of transfers required to achieve sustained implantation and the economics of the other variables, which are likely to vary according to clinic or region-specific factors.

Financial support: none.