

THE NUMBER OF CHILDREN LIVING AT HOME AND THE DURATION OF EMBRYO CRYOPRESERVATION ARE SIGNIFICANT RISK FACTORS FOR CRYOPRESERVED EMBRYO ABANDONMENT

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OBJECTIVE: We hypothesized there were patient characteristics associated with an increased risk for cryopreserved embryo abandonment.

DESIGN: Retrospective Case-Controlled Study

MATERIALS AND METHODS: Patients making final cryopreserved embryo disposition decisions from 2007 - 2013 at a private reproductive endocrine practice were studied. An IRB-approved chart review waiver was granted. Up to 132 variables were collected for each record. Parametric and nonparametric methods such as t-test, weighted least squares regression and chi-square test for independence were performed, all at the $p \leq .05$ level of significance. A sample size of 85 yielded an 80% power of finding a significant difference at the $\alpha = 0.05$.

RESULTS: Out of the 182 study subjects, 44 (24.2%) abandoned their embryos while the control group of 138 (75.8%) chose other disposition options [82 (45.1%) autologous use, 23 (12.6%) laboratory donation, 19 (10.4%) embryo donation to patients, 10 (5.5%) embryonic stem cell research with 4 (2.2%) discarded].

The following characteristics were significantly associated with an increased risk of embryo abandonment:

1. More children at home ($r=0.30$, $t_{161}=3.920$, $p<0.0001$).
2. Long duration of cryostorage ($r=0.23$, $t_{180}=3.15$, $p=.0009$).
3. Large debt to the practice ($r=0.23$, $t_{180}=3.21$, $p=.0008$).
4. Low education level ($r=-0.19$, $t_{162}=2.46$, $p=.007$).
5. Partial/complete IVF insurance coverage ($r=0.15$, $t_{162}=1.87$, $p=0.032$).
6. Primary diagnosis of tubal/peritoneal or endometriosis ($X_3^2=8.74$, $p=0.032$).
7. Large number of embryos cryopreserved ($r=0.13$, $t_{180}=1.74$, $p=0.042$).

For each year of paid cryostorage fees, the risk of abandonment increased by 7.8 percentage points ($F_{1,8}=74.17$, $p<.0001$, $R_{adj}^2=.89$).

CONCLUSIONS: The greater the number of children living at home, the more likely the study subjects were to abandon their embryos. The length of storage significantly also increased the risk of abandonment with the risk increasing by 7.8 percentage points for each year of paid storage. Other significant risk factors for embryo abandonment included debt to the practice, lower education levels, IVF insurance coverage, diagnosis of tubal/peritoneal or endometriosis as well as the larger the number of embryos cryopreserved.