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PERINATAL OUTCOMES IN RECIPROCAL VS. ANONYMOUS DONOR OOCYTE IVF CYCLES

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OBJECTIVE:

Pregnancies in donor egg recipients are associated with a higher risk of adverse perinatal outcomes, potentially due to immunologic reactions to a foreign oocyte resulting in impaired placentation.[1-3] Reciprocal IVF in same-sex female couples involves the use of a patient's oocyte to create an embryo that is transferred to the their partner to conceive a pregnancy.[4] In reciprocal IVF (Co-IVF), the oocyte comes from a familiar source to which the recipient may have developed a level of immune tolerance. Whether Co-IVF might mitigate perinatal risks seen with donor oocyte IVF has never been studied. The objective of this study was to compare the perinatal outcomes of pregnancies conceived from Co-IVF in same-sex female couples and anonymous donor oocyte IVF.

DESIGN:

Retrospective cohort study

MATERIALS AND METHODS:

Oocyte recipient transfer cycles from January 2011 to June 2019 were included in the study. Co-IVF recipient cycles were compared to anonymous donor (AD) oocyte recipient cycles. Demographic and cycle characteristics including recipient age, oocyte age, parity, endometrial thickness, fresh vs. frozen embryos, fresh vs. frozen oocytes, euploid transfer, and high quality embryo transfer were compared between the groups. Primary outcomes were gestational age at delivery, preterm birth, birth weight, low birth weight (<2500g), and macrosomia (>4000g). Comparative statistics and adjusted logistic and linear regression were used for analysis.

RESULTS:

A total of 2620 oocyte recipient cycles were identified and included in the study, of which 108 were reciprocal IVF cycles and 2512 were anonymous donor cycles. Recipient age was significantly lower among Co-IVF compared to AD recipients, while oocyte age was significantly higher. Co-IVF recipients had significantly lower parity and thicker endometrial lining at transfer, and were less likely to use frozen oocytes and to transfer a high-quality embryo. The groups had similar rates of frozen embryo and euploid embryo transfers. Live birth rate was similar between the groups. Gestational age at delivery was significantly higher among Co-IVF recipients compared to AD recipients. No significant differences were seen in preterm birth rate, birth weight, low birth weight, or macrosomia. On multivariate logistic regression, no significant differences were seen in gestational age at delivery (β=0.217, p=0.64), preterm birth (OR 0.84, 95% CI 0.15-4.74, p=0.84), birth weight (β=120.84, p=0.72), low birth weight (OR 0.95, 95% CI 0.16-5.59, p=0.86), or macrosomia (OR 1.18, 95% CI 0.95 0.19-7.41, p=0.86) when controlling for confounders.

CONCLUSIONS:

Our study demonstrates similar perinatal outcomes among Co-IVF and AD oocyte recipients. This data suggests that the non-autologous oocyte induces a similar immunologic reaction within the recipient even when derived from a familiar source. Further study should investigate the mechanism behind adverse perinatal outcomes in donor oocyte recipients. Identification of markers associated with immunological acceptance and compatibility may serve as the basis for optimizing anonymous donor selection.

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