RETROSPECTIVE COMPARATIVE ANALYSIS OF BIRTH OUTCOMES IN IN VITRO FERTILIZATION: EXAMINING AUTOLGOUS EMBRYO IVF VERSUS GESTATIONAL CARRIER IVF

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Background
In vitro fertilization has been linked to adverse obstetric outcomes, and understanding the role of baseline infertility in these outcomes is critical for optimizing IVF procedures [1]. It remains unclear whether the increased risks are due to the IVF process itself or the underlying infertility diagnosis.
Objective
This study aims to determine whether birth outcomes associated with in vitro fertilization (IVF) procedures differ between patients undergoing IVF with autologous embryos and those opting for gestational carriers (GC), aiming to understand the impact of baseline infertility on IVF outcomes.
Materials and Methods
This is a retrospective cohort study of individuals aged 18-45 who underwent autologous IVF or gestational carriers between 2015 and 2022 from a national network of IVF clinics. Autologous IVF inclusion criteria were single embryo transfer via a frozen, programmed cycle. The primary outcome was preterm birth defined as live birth at less than 37 weeks 0 days gestation. Secondary outcomes included very preterm birth (<33 weeks), low birth weight (<2500g), very low birth weight (<1500g), small for gestational age (<10th percentile), large for gestational age (>90th percentile), and macrosomia (>4000g). Descriptive statistics were performed to summarize patient characteristics. Relative risks (RR) with 95% confidence intervals (CI) comparing outcomes between groups were estimated using Poisson regression models adjusted for patient age, BMI, and parity; P values were from Wald tests. A sensitivity analysis restricted the population to ages 22-40, BMI ≤ 40, and parity ≤ 2.
Results
Retrospective chart review identified 7413 autologous embryo transfers and 365 gestational carriers for evaluation. Preterm birth occurred in 16% (n=1176) of autologous embryo transfers compared to 13% (n=48) in GCs (adjusted RR, GC vs. autologous: 0.81, 95% CI: 0.61, 1.07). Macrosomia occurred in 14.5% (n=53) of GC births compared to 9.3% (n=686) of autologous IVF births (RR: 1.34, 95% CI 1, 1.79). Small for gestational age rates were comparable between autologous IVF cycles and gestational carriers. No significant differences were observed in other outcomes. Results of the sensitivity analysis were similar.
Conclusions
Pregnancies resulting from autologous cycles and gestational carrier cycles had comparable rates of preterm birth. Gestational carriers had a higher rate of macrosomic neonates, but this was imprecise after adjustment. While no significant differences were observed in birth outcomes, additional data collection is necessary to address unexplored confounding factors and assess trends within a larger cohort.
Support
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References

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