

RCIF Abstract

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Outcomes of Low Birth Weight Premature Infants Born After Assisted Reproduction Techniques

The use of assisted reproductive technology (ART) has doubled in the last decade. Literature has associated in vitro fertilization (IVF), the most common ART, with multiple gestations and worse outcomes, but extensive longitudinal research is lacking. A cohort study was conducted to compare outcomes of 292 very premature infants born at University of Miami/Jackson Memorial Hospital between January 2005 and December 2017 after IVF, with a control group born after natural conception, matched by gestational age. The populations were comparable and only differed in maternal age ($p < 0.0001$), previous deliveries ($p < 0.0001$), and multiple gestation ($p < 0.00001$), as expected for mothers who chose IVF treatment. A separate analysis addressed the multiple gestations. The gestational age ($27+2$ vs $27+2$ weeks) and birth weight (958.1 ± 342 vs 948.9 ± 311.4 ; $p = 0.8106$) were similar. There were no differences in mortality ($p = 0.602704$) or morbidity in neonatal outcomes (including need of surfactant, duration of oxygen therapy and mechanical ventilation, surgical ligation of persistent ductus arteriosus (PDA), sepsis, incidence of bronchopulmonary dysplasia (BPD), intraventricular hemorrhage (IVH), retinopathy of prematurity (ROP), and necrotizing enterocolitis (NEC)), but the IVF infants died sooner (16.1 ± 26.9 vs. 37.9 ± 45.9 ; $p < 0.0001$) and the presence of minor congenital anomalies was greater in them (7.3% vs. 4.3%; $p < 0.05$). Further research is necessary on biological pathways of these outcomes and the generalizability of results, but these findings are a good initiative to be used by medical providers advising families concerned about IVF treatment.