

Perinatal outcomes of monochorionic twin pregnancies

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Objective

It has been reported that monochorionic twin pregnancies conceived by assisted reproductive techniques (ART) have a higher risk of second-trimester miscarriage, cesarean delivery, and neonatal death than those spontaneously conceived. The objective of this study was to compare perinatal outcomes of monochorionic diamniotic (MCDA) twin pregnancies conceived spontaneously and through ART in a tertiary hospital.

Methods

Retrospective cohort study of all MCDA pregnancies receiving obstetric care and delivering at La Fe University and Polytechnic Hospital. MCDA pregnancies that were referred to the tertiary hospital for specialized management, follow up and delivery were also included. All pregnancies from June 2015 to December 2021 were included. The study was approved by The Health Research Institute Hospital La Fe (IIS La Fe). R version 4.0.3 (The R Foundation for Statistical Computing) has been used for the statistical analysis. Quantitative data were shown as mean and interquartile range, while categorical data were presented as absolute and relative frequencies. Comparisons between the characteristics of the groups were performed using student's t-test or Kruskal-Wallis test for continuous variables, and Fisher's exact testing for categorical variables.

Results

Among 184 MCDA pregnancies, 149 (81%) had spontaneous conception and 35 (19%) were conceived through ART. Patients with a MCDA pregnancy who conceived through ART had a significantly higher maternal age (38.0 (35.5 - 42.5) vs. 32.0 (29.0 - 36.0), $p<0.001$) and an elevated rate of nulliparity (80.0% vs. 50.3%, $p=0.001$). Regarding pregnancy complications, MCDA pregnancies through ART are associated with a significantly higher incidence of gestational diabetes (22.9% vs 2.7%, $p<0.001$), hypertensive disorders during pregnancy (22.9% vs. 9.4%, $p=0.04$), and other pregnancy complications such as threatened preterm labor or preterm prelabor rupture of membranes (14.3% vs. 36.2%, $p=0.015$), than spontaneous MCDA pregnancies. No differences were found in the incidence of twin-to-twin transfusion syndrome (20% vs. 33.6%, $p=0.155$). Spontaneous MCDA pregnancies had a higher rate of vaginal delivery than MCDA by ART (16.8% vs 2.9%, $p=0.032$). No differences were found regarding neonatal outcomes.

Conclusion

MCDA twin pregnancies conceived through ART have a significantly higher incidence of gestational diabetes, hypertensive disorders during pregnancy, and other pregnancy complications, as well as a lower rate of vaginal delivery. No differences regarding neonatal outcomes were found.