

A Descriptive Study on Comparison of Maternal and Perinatal Outcome of Twin Pregnancies Conceived Spontaneously and by Assisted Conception Methods

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Abstract : Introduction: Advances in assisted reproductive technology and increase in the proportion of infertile couples have both contributed to the steep increase in the incidence of twin pregnancies in past decades. Maternal and perinatal complications are higher in twins than in singleton pregnancies. Studies comparing the maternal and perinatal outcomes of ART twin pregnancies versus spontaneously conceived twin pregnancies report heterogeneous results making it unclear whether the complications are due to twin gestation per se or because of assisted reproductive techniques. The present study aims to compare both maternal and perinatal outcomes in twin pregnancies which are spontaneously conceived and after assisted conception methods, so that targeted steps can be undertaken in order to improve maternal and perinatal outcome of twins. Objectives: To study perinatal and maternal outcome in twin pregnancies conceived spontaneously as well as with assisted methods and compare the outcomes between the two groups. Setting: Women delivering at JIPMER (tertiary care institute), Pondicherry. Population: 380 women with twin pregnancies who delivered in JIPMER between June 2015 and March 2017 were included in the study. Methods: The study population was divided into two cohorts - one conceived by spontaneous conception and other by assisted reproductive methods. Association of various maternal and perinatal outcomes with the method of conception was assessed using chi square test or Student's t test as appropriate. Multiple logistic regression analysis was done to assess the independent association of assisted conception with maternal outcomes after adjusting for age, parity and BMI. Multiple logistic regression analysis was done to assess the independent association of assisted conception with perinatal outcomes after adjusting for age, parity, BMI, chorionicity, gestational age at delivery and presence of hypertension or gestational diabetes in the mother. A p value of < 0.05 was considered as significant. Result: There was increased proportion of women with GDM (21% v/s 4.29%) and premature rupture of membranes (35% v/s 22.85%) in the assisted conception group and more anemic women in the spontaneous group (71.27% v/s 55.1%). However assisted conception per se increased the incidence of GDM among twin gestations (OR 3.39, 95% CI 1.34 - 8.61) and did not influence any of the other maternal outcomes. Among the perinatal outcomes, assisted conception per se increased the risk of having very preterm (<32 weeks) neonates (OR 3.013, 95% CI 1.432 - 6.337). The mean birth weight did not significantly differ between the two groups (p = 0.429). Though there were higher proportion of babies admitted to NICU in the assisted conception group (48.48% v/s 36.43%), assisted conception per se did not increase the risk of admission to NICU (OR 1.23, 95% CI 0.76 - 1.98). There was no significant difference in perinatal mortality rates between the two groups (p = 0.829). Conclusion: Assisted conception per se increases the risk of developing GDM in women with twin gestation and increases the risk of delivering very preterm babies. Hence measures should be taken to ensure appropriate screening methods for GDM and suitable neonatal care in such pregnancies.

Keywords : assisted conception, maternal outcomes, perinatal outcomes, twin gestation

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