



## Perinatal outcome in pregnancies with maternal implantable cardiac defibrillators

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### Objective

Clinical impact of implantable cardiac defibrillators (ICD) in pregnant women with cardiac disease has not been yet well described. Only few series in literature are available. The aim of the present study was to assess maternal and perinatal outcome in pregnant women with cardiac disease and ICD.

### Methods

Between March 2012 and 2018, we have prospectively included all consecutive pregnant women with heart disease who delivered in a tertiary centre in Barcelona. Maternal characteristics, fetal ultrasound assessment and perinatal outcomes were compared between pregnant women with or without an implanted ICD.

### Results

A total of 78 pregnancies with maternal cardiac disease were included in the analysis, 8 women delivered with an ICD, and 70 without. There were no significant differences in maternal characteristics (age, ethnicity, tobacco use during pregnancy or other comorbidities) between the 2 groups. Women in the ICD group were more frequently diagnosed of a primary arrhythmic disease (87. 5% Vs 50%; p 0. 044), and the presence of a channelopathy was the main indication for ICD implantation (75%). The use of Beta-blockers during pregnancy was higher in the ICD group (62. 5% Vs 12. 9%; p 0. 001). No differences were observed in the use of other drugs for cardiological indication. An inappropriate discharge of the ICD occurred in one patient in the first trimester due to lead dysfunction that required lead replacement in the second trimester, with no adverse repercussion in the fetal or mother's outcomes. Regarding fetal growth, a smaller second trimester centile was observed in the ICD group, although no significant differences were detected in the incidence of small for gestational age (SGA) or Doppler abnormalities throughout pregnancy. A similar gestational age at delivery, induction of labour rates, mode of delivery, neonatal acidosis and admission to NICU were observed in both groups. Birthweight was not found to be statistically different (2836g Vs 3232g; p 0. 073). The mean difference in birthweight was 396g, albeit not reaching statistical significance. We did not observe a higher incidence of preterm birth (12. 5% Vs 5. 7%; p 0. 458), preeclampsia (0% Vs 2. 9%, p 0. 628) or SGA at birth (12. 5% Vs 20. 3%; p 0. 598) in the ICD group.

### Conclusion

Pregnancy in women with ICD was found to be associated with a higher use of beta-blockers during pregnancy but not with intrauterine growth restriction, fetoplacental Doppler abnormalities or other adverse perinatal outcome in our study, although we acknowledge the relatively low sample size of our cohort.