

A Single-Centre Experience with Antenatally-Diagnosed Atrioventricular Block

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Background

Cardiac rhythm abnormalities are found in 1-2% of fetuses. These may be benign or may be associated with fetal hydrops. Complete atrioventricular (AV) block occurs in approximately 1 in 20,000 live births. 90% of isolated AV block cases are associated with anti Ro-antibodies which result in direct immunological damage to the AV node. Complete AV block carries a risk of intra-uterine death and the long term risk of dilated cardiomyopathy.

Methods

The Fetal Cardiology database of a tertiary referral center was reviewed retrospectively over a 20 year period from 1997 to 2017. Cases of antenatally-diagnosed AV block were identified and their case histories reviewed.

Results

During the study period, out of 3.1% of the referrals to Fetal Cardiology, 9 cases of AV block were antenatally diagnosed. Complete AV block made up 27% of cardiac rhythm disorders in the Cardiac Fetal Database. Detailed case histories and echocardiographic images were available from 2012. Over the last 5 years, 5 cases presented antenatally to our Cardiology centre. All mothers were anti-SSA positive. In 4 pregnancies, the mothers were treated with transplacental oral steroids. Maternal oral salbutamol was used in 2 pregnancies. 1 patient refused steroids and salbutamol. 3 infants required isoprenaline in the neonatal period. 3 infants underwent insertion of permanent pacemaker. None developed cardiomyopathy, and no deaths were noted.

Conclusion

The incidence of antenatally diagnosed complete AV block was noted to be higher in our experience in comparison to Western countries. Treatment options include fluorinated steroids and sympathomimetics to increase fetal heart rate. Despite a range of treatments, none of the infants developed cardiomyopathy. Further directions in immune-mediated AV block includes the determination of maternal serum anti-SSA titres.