

Progression to first degree heart block in preschool children fetally exposed to Ro52 autoantibodies

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Introduction: Isolated congenital complete atrioventricular block (AVB) is associated with transfer of maternal anti-Ro/SSA autoantibodies to the fetus and has a high mortality and morbidity. The importance of first- and second degree AVB developing in the fetus is less well studied, including its long term prognosis. This study evaluated children fetally exposed to maternal anti-SSA/Ro antibodies in terms of signs of impaired atrioventricular (AV) conduction or myocardial disease and correlated prenatal Doppler findings to outcome.

Methods: A cohort of 57 children fetally exposed to anti-SSA/Ro was identified and grouped in accordance to (A) prenatal Doppler signs of first-degree AV block (1°AVB) or (B) normal findings, and examined by ECG, 24- h Holter and Echocardiography. Outcome was differences for variables obtained by ECG, Holter and Echocardiography.

Results: The PR interval was significantly longer in group A (N=16) compared to group B (N=41), 140 ± 24 ms vs. 121 ± 13 ms ($p < 0.01$). Six cases of 1°AVB (one with intermittent 2°AVB) and one case of intermittent 1°AVB developed in group A, progressing from normal sinus rhythm at 1 month of age. Prenatal Doppler predicted development of 1°AVB at follow-up with a sensitivity of 100 %, a positive predictive value of 37.5%, a likelihood ratio of + 5.1 and a negative predictive value of 100%. No differences were revealed regarding HR, QTc, or M-mode measurements. Children in group A had a slightly higher myocardial performance index, mainly due to a longer isovolumetric contraction time, in both flow- and tissue Doppler imaging (TDI) recordings. Abnormal TDI values were seen in only one case.

Conclusions: Fetally anti-SSA/Ro exposed children with transient perinatal signs of disturbed AV conduction may progress to 1°AVB postnatally. Children at risk can be identified by prenatal Doppler echocardiography

