

Isolated AV-Block in the Fetus. A Dutch Retrospective Analysis

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INTRODUCTION:

As there is no consensus concerning the follow-up and treatment of congenital atrioventricular block (CAVB) the prenatal course of CAVB in the Netherlands of the last decade was compiled.

METHODS:

A nationwide database of all Dutch paediatric cardiac centres was initiated to retrospectively analyse the outcome of fetuses with a CAVB II°/III° from 2003 to 2013. Patients with complex congenital heart disease, LQTS or chromosomal abnormalities were excluded.

RESULTS:

56 fetuses were indentified. 28 fetuses were initially diagnosed with CAVB-II° at a gestational age (GA) of 23.3 (17.6-41.2) weeks and mean heart-rate of 71 bpm (51-100). 27 were initially diagnosed with CAVB-III° at a GA of 22.6 weeks (range, 17.2-36.4) with a mean heart-rate of 57 bpm (30-71). 1 fetus progressed from CAVB-I° to CAVB-III°. 16 fetuses progressed from CAVB-II° to CAVB-III° prenatally. 5 (8,8%) women opted for termination. 7 (12.3%) fetuses (CAVB-III°) died in utero. Mean heart-rate in intra-uterine deaths at diagnoses of CAVB was 55 bpm (95% CI: 43.5- 67.1) at a mean GA of 20.4 weeks (95% CI: 19.0-22.0). Live-births had a heart-rate of 66 bpm (95% CI: 61.9-69.4) and GA of 24.0 weeks (95% CI: 22.4-25.4). 3 children with AVB-II improved prior to birth. One - negative for maternal autoantibodies - resolved spontaneously. 2 others receiving dexamethason converted to CAVB-I° and 0 respectively.

23 (41.1%) fetuses received therapy, 7 β -mimetics, 5 steroids and 11 both. 10 fetuses had hydrops, which resolved in 3 of 5 receiving B-mimetics, 3 of 5 receiving both, whereas 2 other fetuses receiving both medications died. In total 4 treated fetuses died. At the last fetal exam 2 had hydrops, 6 had pericardial effusion. In 9,1% the cardiac function was impaired at the last fetal exam.

CONCLUSION:

The prenatal course of CAVB shows a moderate mortality rate, which is related to earlier gestational age at diagnosis and lower heart-rates. The number of initially diagnosed CAVB II° seems high and it has to be scrutinised whether the majority was CAVB III° instead.

Our aim is now to re-evaluate prenatal diagnostic work-up and follow-up and to develop a Dutch consensus on therapy.