

MP1-6

Fetal Aortic Arch variants: Left or Right matters!

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Introduction:

Following routine anomaly ultrasound improved heart imaging, a greater number of aortic arch (AA) abnormalities is expected to be detected. The clinical impact of this remains to be determined.

Methods:

Retrospective study of 3,414 fetal echocardiogram (FE) records of a tertiary academic referral centre (2008-2107) regarding: 1) antenatal diagnosis of AA variants, including combinations of right aortic arch (RAO) with/or without aberrant left subclavian artery (ALSCA), retroesophageal ductus arteriosus (rPDA), double aortic arch (DA) and left aortic arch (LAO) with aberrant right subclavian artery (ARSCA) 2) AA diagnosis prior or following FE, 3) isolated (ISO) or associated with congenital heart disease (CHD) 4) karyotype abnormalities 5) NT findings, 6) postnatal outcome

Results:

52 pregnancies, median GW: 23 wk (18-35), maternal age: 30,4yrs (20-44), IVF (n=6) were included. In 20 (38%) the AA variant was first detected during FE (ISO n=15), corresponding to isolated AA variant as new finding 0.44% (1 in 227).

34 (65%) were isolated defects: ARSCA-LAO (n=15), RAO (n=1), DA (n=1), RAO-ALSCA (n=2), RAO-ALSCA-rPDA (n=8), RAO-rPDA (n=7). 18 (35%) were CHD-associated: ARSCA-LAO (n=6), RAO (n=1), RAO-ALSCA, RAO-ALSCA-rPDA, RAO-rPDA, a single case each. Associated CHD (n=18, 35%) included VSD (n=6), ToF (n=5), suspected CoA (n=4), TrA, PAtr.-VSD, PS, a single case each. Abnormal NT-values (14%), fetal malformations (10%), abnormal Karyotype (12%, Di George n=2) were documented.

The side of aortic arch (RAO vs LAO-ARSCA) and the presence of CHD (ISO vs CHD) had a weak (non-significant) association with the probability of abnormal karyotype, abnormal NT, fetal malformation and postnatal outcome (Table)

AA variant	Abnormal Karyotype	Abnormal NT	Fetal Malformation	Feeding Problems	Feeding-operation	CHD-operation
ISO- RAO (n=19)	2/16 (12%)	4/14 (22%)	1/18 (6%)	2/8 (25%)	1/8 (12%)	
ISO-ARSCA (n=15)	0/13 (0%)	1/13 (7%)	1/15 (7%)	1/9 (11%)	0/9 (0%)	
CHD-RAO (n=12)	2/9 (22%)	1/10 (10%)	3/11 (27%)	0/7 (0%)	0/7 (0%)	4/7 (57%)
CHD-ARSCA (n=6)	1/5 (20%)	1/6 (14%)	0/7 (0%)	1/3 (33%)	0/3 (0%)	0/3 (0%)

Conclusions:

Isolated left aortic arch variants (ARSA) might have a weaker association with fetal karyotype abnormalities and better outcome compared to right arch variants or those associated with CHD.