Atrioventricular block (AVB): antenatal diagnosis and late postnatal follow-up

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INTRODUCTION

Complete AVB is the most frequent fetal presentation of conduction disorders. The aims of this study were to investigate intrauterine diagnostic spectrum, late postnatal evolution of AVB and risk factors associated to poor outcome.

METHODS

From December 1994 to December 2010, 33 consecutive fetuses with AVB (age: 18-38w; mean: 31.3±3.9w) were identified by ECHO and followed-up after birth (1.1-16.0y; mean: 7.9±3.4y). Variables selected for analysis: maternal disease, gestational age (GA) at delivery, degree of hydrops, atrial and ventricular rates, structural cardiac lesions, cardiomyopathy.

RESULTS

The maternal mean age was 28.4±4.4y and 48.5% had a connective tissue disease (n=33). The gestational age at delivery ranged from 28-38w (median: 37w) and the atrial and ventricular rates from 96-162 and 33–91 beats/min, respectively.

Significant hydrops occurred in 53.3% and death, including 2 newborns with pacemaker, in 11/33 (33.8%) of which 45.4% during the prenatal period. Gestational age <37w was found in 67.8% of stillborns and in 83.3% patients with neonatal death. Fourteen pacemakers (8 on first day) were implanted, mostly in G1 (86.7%). From the 22 survivors, 18 are asymptomatic (8 with pacemaker) and 4 with pacemaker and class II or III NYHA (1 resynchronization therapy). The risk factors associated to death included hydrops III and IV (p; 0.004), significant structural heart disease (p: 0.010), ventricular rate < 55 beats/min (p: 0.001), and GA<37w (p: 0.003). Dilated cardiomyopathy was associated with HR< 40 beats/min (prenatal period) and with long term pacing (postnatal period).

CONCLUSIONS

Considering the high frequency of intervention and death, the complete AVB is a severe fetal arrhythmia, with early and late important repercussions, mainly in the group with associated congenital heart disease, severe bradycardia and early presentation. The fetal echocardiography is very useful for early detection which contributes to optimize the prenatal and postnatal management.

REFERENCES