

HEART DISEASE IN THE NEWBORN OF DIABETIC MOTHER USEFULNESS OF ECHOCARDIOGRAPHIC ASSESSMENT

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OBJECTIVES:

To present the main aspects of cardiac involvement in newborn of diabetic mother and utility of echocardiography (Echo) for the diagnosis and follow-up their evolution

METHODS:

Patients: 76 newborns of diabetic mothers, follow up over a period of 6 years. Patients were investigated in the first week of life and 49 were re evaluated at 6-12 month, by clinical exam, ECG, cardiothoracic radiography (Rx.CT) and Doppler echo for congenital and/or acquired cardiac diseases. Fetal echo was performed in 36 cases after 28 weeks of gestation.

RESULTS:

Fetal echo showed: cardiomegaly and myocardial hypertrophy of left ventricle (LV) in 9 cases, confirmed by postnatal echo. Clinical exam in newborn: macrosomia in 40% cases, in 32 patients a systolic murmur was found, only 2 cases with signs of heart failure and the other being asymptomatic or presenting signs for other pathology than cardiac. ECG: LV hypertrophy in 14 cases and disturbed ventricular repolarization in 30 cases.

Rx.CT: cardiomegaly (12 cases).

Echo showed:

- non obstructive hypertrophic cardiomyopathy (HCMP) with asymmetric IVS hypertrophy (32 cases: 42%),
- arterial pulmonary hypertension (5),
- LV diastolic dysfunction with normal systolic function (52 % of cases)
- congenital cardiac anomalies: PDA (6), VSD (3), coarctation of aorta (1), ASD (4 cases).

LV myocardial hypertrophy was not significantly correlated with the type of mother's diabetes, before pregnancy or gestational, but rather to an inadequate control of disease.



N.N. 12 days.
Newborn of
diabetic mother



Fig.A,B Hypertrophic cardiomyopathy



Fig.C. Diastolic dysfunction of LV: E/A < 1

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Control performed at 6-12 months (21 cases) revealed a normal morphological cardiac aspect in 14 cases or significant reduction of HCMP (7 cases), all of them showing normal diastolic and systolic LV function.

CONCLUSIONS:

Newborn of diabetic mother presents a high risk for cardiac involvement, either cardiac congenital malformations (19 %) or acquired cardiac pathology: HCMP (42 % of cases) and disturbances of diastolic function of LV (53%). This fact justifies early cardiologic screening for all of these newborns with or without of cardiac suffering symptoms. Fetal echo provides useful data for diabetic pregnant women and should be made mandatory to all these patients. Echocardiography is the most sensitive and noninvasive method of diagnostic, useful for primary diagnostic as well as for follow up.