

**Cord blood cardiac biomarkers profile and echocardiographic ventricular function parameters in newborns with prenatal diagnosis of congenital heart defects**

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**Objective**

The aim of this study was to evaluate the usefulness of cardiac biomarkers in the cord blood newborns with prenatal diagnosis of congenital heart defects (CHD).

**Method**

From August 2012 to March 2015, newborns with prenatal diagnosis of CHD were admitted consecutively at a Neonatal Intensive Care Unit. Healthy newborns delivered in the same hospital were recruited as controls. Plasma levels of cardiac biomarkers were measured in the cord blood and echocardiogram performed in both groups. Biomarkers cut-off value was generated and correlations with echocardiographic parameters were performed.

**Results**

No significant differences were observed between BNP, CK-MB and myoglobin between CHD and control groups. CK-MB levels were significantly higher in cyanotic CHD patients than in acyanotic CHD. The cut-off offering optimal accuracy was 3.45 ng/mL for CK-MB (sensitivity 75 %, specificity 67%). CK-MB cord blood levels were positively correlated with the tricuspid valve E/E' ( $p= 0.002$ ;  $\rho= 0.772$ ). Troponin I levels were negatively correlated with the mitral valve lateral annulus slope ( $p= 0.04$ ;  $\rho= -0.412$ ).

**Conclusion**

BNP, CK-MB and myoglobin cord blood levels were similar between CHD patients and healthy newborns. CK-MB cord blood levels were higher in newborns with cyanotic than in acyanotic CHD and were correlated with right ventricular diastolic function parameters.