

# Cardiac biomarkers for early diagnosis of anthracycline induced cardiotoxicity in children with malignant diseases

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## Background

Cardiac biomarkers research in children treated with anthracyclines for malignancy is useful for the early diagnosis of anthracycline induced cardiotoxicity.

## Objectives

To establish the value of research of cardiac biomarkers for early diagnosis of anthracycline induced cardiotoxicity in children with malignant hemopathies

## Methods

**Patients:** 46 children (aged 2 months - 18 years), treated for malignant hemopathies with anthracyclines with various manifestations of cardiotoxicity

**Control group:** 20 healthy children without history of cardiac diseases.

**Patients and controls were investigated by:**

- clinical exam
- Doppler echocardiography (Echo),
- determination of plasma values of cardiac biomarkers: BNP(B natriuretic peptide) and cTnI(troponin).

## Results

. Determination of cardiac biomarkers showed:  
\*Increased plasma levels of BNP in 45.7% of patients, from a mean baseline of 89 ng / ml (0-117 ng / ml) to value 240 ng / ml (0-810 ng / ml),\* increasing cTnI values. plasma at 4.34% of cases, the initial values <0.04 pg / ml to values > 0.04 pg / ml in 2 cases. Echo modifications: anthracycline induced cardio-myopathy or just only diastolic dysfunction of LV in majority of cases, often correlated with cumulative dose of anthracyclines. Biomarkers changes were correlated in most cases with the presence of clinical manifestations and echo modifications induced by anthracycline cardiotoxicity.

## Conclusions

Increased levels of cardiac biomarkers: BNP and cTnI in children treated with anthracyclines ± other drugs with cardiotoxic effects positively correlates with installation of the cardiotoxicity with clinical or infraclinical manifestations, constituting an useful marker for the cardiotoxicity. Changes in this parameters appeared early than echo modifications in anthracycline induced cardiotoxicity and is necessary to systematic monitoring these parameters during and after cytostatic therapy