

ASSESSING THE CLINICAL UTILITY OF CARDIAC BIOMARKERS IN PEDIATRIC PATIENTS AT FARHAT HACHED UNIVERSITY HOSPITAL



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Introduction and objective

Cardiac biomarkers are increasingly used in pediatric populations, but the clinical relevance of these tests in children remains debated, particularly due to the lack of robust data on pediatric reference limits to guide clinical decision-making.

This study aims to evaluate the relevance of measuring NT-proBNP (N-terminal pro Brain Natriuretic Peptide) and troponin in the pediatric population

Materials and Methods:

This is a descriptive retrospective study involving 148 requests for NT-proBNP and troponin measurements received by our biochemistry laboratory over an 8-month period (January 1, 2023 - August 31, 2023).

Results

In total, 148 patients were included, with an average age of 3.5 ± 3 years, ranging from 1 month to 14 years, with a slight male predominance (sex ratio of 1.4). Indications for NT-proBNP and troponin measurements are represented in **Figure 1**:

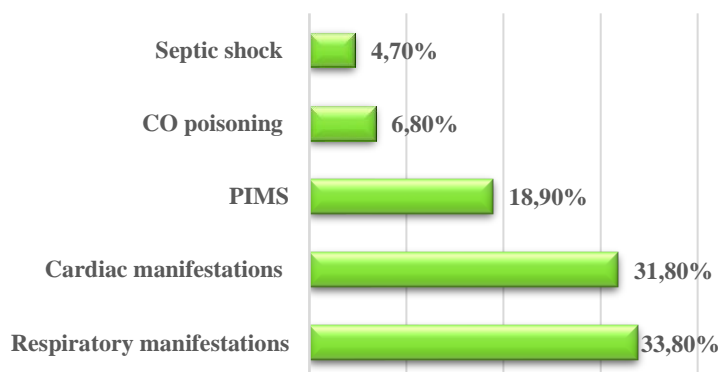


Figure 1: NT-proBNP and Troponin measurements main indications

Results

- ❖ A significant portion of patients had elevated NT-proBNP levels (64%) with an average NT-proBNP of 1498.48 pg/ml
- ❖ Elevated troponin levels were observed in 39.9% of patients with an average of 44.74 pg/ml. **Figure 2**

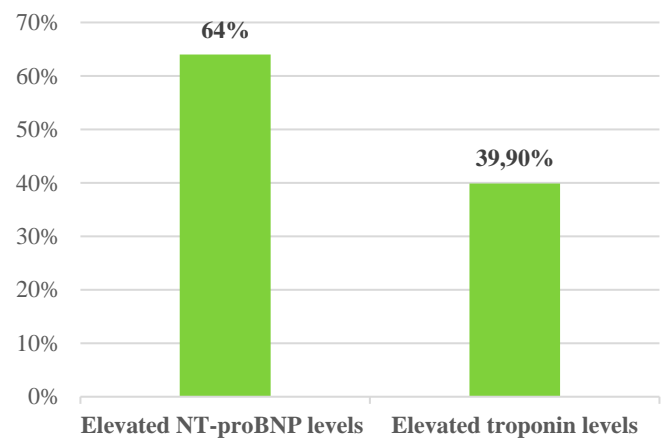


Figure 2: Proportions of patients with elevated NT-proBNP and Troponin levels

Conclusion

While the diagnostic and prognostic value of NT-proBNP in heart failure has proven to be superior to other biological markers, pediatric reference intervals are not well defined and their concordance in evaluating these patients has been poorly described. Therefore, it seems necessary to propose an international consensus with pediatric reference intervals to optimize management in pediatric settings.

Key words

Cardiac biomarkers, pediatric, reference limits