Diagnostic usefulness of N-terminal pro-brain natriuretic peptide among children with heart failure in a tertiary hospital in Lagos, Nigeria.

Ekure EN¹, Okoromah CA, Ajuluchukwu JN, Mbakwem A, Oladipo OO.

Abstract

BACKGROUND: N-terminal pro-brain natriuretic peptide (NTproBNP) is useful in the diagnosis and management of adult patients with heart failure.

OBJECTIVE: The objective of the study was to determine the usefulness of NT-proBNP in diagnosing congestive heart failure (CHF) in children and its correlation with left ventricular ejection fraction (LVEF) and clinical heart failure score.

METHODS: Plasma NT-proBNP was measured in 28 children with CHF and age matched controls. Heart failure assessment was done using modified Ross score and all had echocardiography done.

RESULTS: Mean plasma NT-proBNP of children with CHF (377.86±1026.49pg/mL) was significantly higher than that of controls (353.61±328.50 pg/mL) (p<0.001). A plasma NT-pro BNP of 951pg/mL was used as the cut off value for heart failure. The sensitivity, specificity, negative and positive predictive values were 57%, 96%, 69% and 94% respectively. NT-pro BNP levels showed a high positive correlation with the modified Ross score (r= 0.502; p<0.001) but low correlation with LVEF (r= -0.137; p>0.3).

CONCLUSION: Our findings indicate that measuring NT-pro BNP may be useful as a diagnostic tool in congestive cardiac failure in children. The fact that its levels also correlated positively with modified Ross score thereby objectively determining severity of heart failure suggests that this biomarker may also be useful as an evaluation tool in congestive cardiac failure in children.

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