

## Abstract

**Background:** Recently brain natriuretic peptide (BNP) level has been introduced as a screening test for congestive heart failure (CHF) in children. The current CHF assessment scores are not satisfactory as they use a large number of variables.

**Objective:** To evaluate two CHF scores: a modified clinical score and an echocardiographic score and compare them to BNP in paediatric patients.

**Design:** Prospective, hospital based study.

**Setting:** Two paediatric cardiac referral centres in Khartoum from April to July 2010.

**Subjects:** All patients one month to 18 years of age with the clinical diagnosis of CHF were included.

**Results:** Sixty seven patients were enrolled, 39 (58%) had congenital heart disease (CHD), 27 (32%) had rheumatic heart disease (RHD), and seven (10%) had dilated cardiomyopathy (DCM). Twenty four younger children (88%) and 29 older children (85%) had a high clinical score (severe CHF). Twenty one out of 23 younger children with high echo score (91%) had a high clinical score as well (p-value 0.001). In patients with RHD (all with a high clinical score), 81 % had a high echo score. (p-value 0.001). All younger children with a high clinical score (n=24) had a high level of BNP (p-value 0.00). In older children with a high clinical score 28 out of 29 (96%) had a high BNP level (p-value 0.00). Of patients with RHD and a high echo score (21), 16 (76.2%) patients had high BNP level and five (23.8%) had low level of BNP. All patients with DCM had high echo score and all of them had high levels of BNP (100%) (p-value.0.00).

**Conclusion:** We tested clinical and echo scores and proved their value in assessment of CHF in children. The scores correlated well with BNP level. We recommend the use of these scores as well as BNP level in clinical practice.