

MARKEDLY ELEVATED B-TYPE NATRIURETIC PEPTIDE PREDICTS SHOCK IN OBSTRUCTIVE CARDIAC LESIONS ON SYSTEMIC SIDE

i2 Poster Contributions

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Background: B-type natriuretic peptide (BNP) is increasingly used in the diagnosis, risk stratification, and management of adult cardiac patients. Infants with obstructive lesions to left ventricular output and duct dependent systemic circulation can present with shock and need to be promptly identified from non-cardiac causes. We describe and compare BNP levels among different presentation groups of systemic obstructive congenital cardiac lesions.

Methods: This was a retrospective study. Demographic, laboratory and clinical data were abstracted from patient records of the last 100 infants diagnosed with any form of left (systemic) side obstructive lesions, presenting to our center. BNP levels before and after intervention were compared among groups with different presentations i.e. with and without shock. Statistical analysis was done using STATA-9 and a p-value of <0.05 was considered significant.

Results: Demographic characteristics of the study population were 62% males, mean weight 3.2 ± 0.2 kg, mean age at presentation 9 days (1 d vs 15 d with prenatal diagnosis, $p=0.004$). 41% were prenatally diagnosed and 7% were preterm infants. The diagnoses included Coarctation of Aorta (36%), Hypoplastic left heart syndrome (50%), Aortic stenosis (5%) and Interrupted Aortic arch (9%). Those presenting in shock had a initial BNP of 2543 pg/ml (mean) vs 683 pg/ml in those without shock ($p<0.001$). Every 100 units increase in the level of BNP increases the odds of shock on presentation by 1.0 (100%, $p=0.001$). However, statistically there was no difference between the two groups with post intervention BNP levels and the rate of decline of BNP after relief of obstruction. After surgical intervention to relieve obstruction there was rapid decline in the levels with nadir by 3 days.

Conclusions: Markedly elevated BNP levels suggest ductal closure and shock like state in infants with systemic outflow obstruction. Thus, BNP levels can be used to identify and monitor infants with critical obstruction to systemic circulation.