

## DOES SERUM BRAIN NATRIURETIC PEPTIDE (BNP) TOGETHER WITH A NOVEL PDA SCORE IMPROVE PDA TREATMENT SELECTION?

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**Background:** The determination of whether or not a PDA is hemodynamically significant, requiring treatment, poses a dilemma to the clinician. BNP measurement has been reported to be useful in the diagnosis of a hemodynamically significant PDA (HSPDA) in preterm infants.

**Objectives:** To determine whether serum Brain Natriuretic Peptide (BNP), together with a high PDA score measured between 48-72 hours of life, predict a (HSPDA) requiring closure in infants < 31 weeks GA.

**Study design:** This prospective, blinded cohort study was conducted on Infants < 31 weeks GA, admitted August 2010 to February 2011, to NICU in Winnipeg, Canada, had, following parental consent, bedside serum BNP assay, echocardiogram and a novel PDA score determined between 48-72 hours postnatally, blinded from the treating team. BNP was correlated with echocardiographic parameters and PDA score. Reference standard for HSPDA was PDA diameter >1.5mm by ECHO with left to right non-restrictive shunt.

**Results:** Thirty four of ninety eligible neonates were studied. HSPDA was present in 17. Mean ( $\pm$ SD) gestational age (weeks) for HSPDA group was 26.7 $\pm$ 1.2, non-HSPDA group 28.6 $\pm$  1.1(p< .000); birth weight (g) HSPDA group was 897 $\pm$ 16, non-HSPDA group 1270 $\pm$ 27 (p< .000). Median (IQ range) PDA score for HSPDA group was 15 (9, 14.5), non-HSPDA group 3(2, 3.5) (p< .000). Median (IQ range) BNP for HSPDA group was 320(120,671)pg/ml, non HSPDA group 16(6,34)pg/ml(p< .000).For HSPDA, sensitivity, specificity, positive and negative predictive values for both PDA score and BNP were 94%, 100%, 100%, 94%, respectively.

**Conclusion:** Both BNP and PDA score predict HSPDA requiring treatment. Cut off values were 90pg/ml, score >7 respectively.