

Correlation of Plethysmograph Variability Index with Inferior Vena Cava Index in Spontaneously Breathing Neonates – A Cross Sectional Study

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Inferior vena cava (IVC) indices are commonly used to assess the need for fluid bolus during shock. It needs expertise and is difficult to do during surgical procedures. Plethysmograph variability index (PVI) is a simpler non-invasive tool used to measure fluid responsiveness in adults. However, the data on PVI in neonates is limited. This cross-sectional observational study was done at a tertiary level NICU to correlate PVI and IVC among spontaneously breathing neonates. The PVI was documented using the Masimo Radical 7 pulse oximeter. The IVC collapsibility index (IVC CI) was determined by bedside ultrasound. The Spearman correlation coefficient was analyzed. The PVI showed strong positive correlation with IVC CI ($\rho = 0.64$, 95% CI: 0.474–0.762) ($p < 0.001$). Thus, PVI can be a useful tool for hemodynamic monitoring of neonates. However, further studies are needed before applying it to clinical use.