

## **Correlation of Serum Lactate Levels, Perfusion Index and Plethysmography Variability Index With Invasive Blood Pressure in Late Preterm and Term Infants With Shock**

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**Objective:** To study the correlation of objective parameters for diagnosing shock viz., perfusion index (PI), plethysmography variability index (PVI) and serum lactate (SL) with invasive blood pressure in late preterm and term infants with shock.

**Methods:** Prospective observational study (diagnostic test) conducted at the neonatal intensive care unit of Kanchi Kamakoti CHILDS Trust Hospital, Chennai between June, 2018 and May, 2020. Term and late preterm neonates with shock were included in the study. PI, PVI, SL, SpO<sub>2</sub> and heart rate were monitored. PI and PVI were recorded by using new generation Masimo pulse-oximeter. PI, PVI and SLL were recorded at 0,12, 24 and 72 hours of onset of shock. All the babies were followed up till discharge or death.

**Results:** Total 78 neonates were enrolled in the study. At 0 hour, SL and PVI had negative correlation ( $P=0.002$  and  $P=0.003$ ) while PI had a weak-to-moderate positive correlation ( $P=0.002$ ) with invasive blood pressure.  $SL \geq 4.65$  had a sensitivity of 75% and specificity of 75.8%, and  $PI < 0.455$  had a sensitivity of 65%, and specificity of 58.6% for predicting invasive hypotension.  $PVI \geq 23.5$  had a high sensitivity of 90% and specificity of 63.8% in predicting invasive hypotension.

**Conclusion:** PI has moderate positive correlation while SL and PVI have moderate negative correlation with invasive blood pressure. The cutoff values of  $SL \geq 4.65$ ,  $PI < 0.45$  and  $PVI \geq 23.5$  can predict invasive hypotension with good sensitivity and negative predictive value.