

Procalcitonin Level in Neonatal Sepsis

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ABSTRACT

A prospective study was conducted in a tertiary care centre from June 2015 to October 2016 to evaluate role of serum procalcitonin (PCT) level in predicting neonatal sepsis and comparison with CRP as a marker of neonatal sepsis. 100 neonates admitted in newborn intensive care unit (NICU) from the study group. These newborns were categorized into proven sepsis, suspected sepsis and control group based on symptoms and signs of infection and blood culture findings. Procalcitonin and CRP level were done for all these newborns. These levels were then statistically compared for all the groups. Out of 80 cases, 48 cases were of early onset sepsis and rest 32 were of late onset sepsis (LOS). 47(97.9%) out of 48 cases with early onset sepsis had positive procalcitonin level, while 30 (93.75%) out of 32 cases with LOS had positive procalcitonin value. 9 (18.75%) out of 48 cases with EOS had positive CRP value, while 15(46.87%) out of 32 cases with LOS had positive CRP value. Mean PCT was 33.75 ± 13.75 ng/dl, 29.58 ± 13.87 ng/dl and 0.335 ± 0.4 ng/dl for proven sepsis, suspected sepsis and control groups respectively. Corresponding values for CRP were 1.33 ± 1.74 , 2.264 ± 3.02 and 0.97 ± 2.87 ng/dl respectively for proven sepsis, suspected sepsis and control group. The sensitivity, specificity, PPV and NPV of procalcitonin was 96.25%, 85%, 96.25% and 85% and the sensitivity, specificity, PPV and NPV of CRP were 30%, 90%, 92.33% and 25% respectively. On comparing CRP and procalcitonin, there was statistically significant difference ($p < 0.005$) for early onset sepsis, while there was no significant difference ($p > 0.05$) for late of onset sepsis. Procalcitonin is highly sensitive marker in early onset sepsis with good positive and negative predictive value and high sensitivity.