

## Role of Serum Procalcitonin as a marker of neonatal sepsis

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### Abstract

Despite the advances in perinatal and neonatal care and use of newer potent antibiotics, the incidence of neonatal sepsis remains high and the outcome is still severe.

### Objective

To study the ROLE OF SERUM PROCALCITONIN AS A MARKER OF NEONATAL SEPSIS and To compare procalcitonin with CRP as a diagnostic marker for neonatal sepsis.

### Method

Hospital Based prospective observational study. 50 neonates (preterm & term) with clinically suspected sepsis were studied during 1 year from Jan 2016 to Dec 2016 in Chaitanaya Hospital Chandigarh. Conventional sepsis workup was done in all cases and the diagnosis of neonatal sepsis was proved based on the results of blood culture. The serum Procalcitonin was measured by quantitative Enzyme linked immunofluorescence assay and the results were compared to CRP levels between the neonates with or without proven sepsis.

### Results

Of the total 220 babies admitted in NICU during that period 50 were eligible for study and analyzed. 24 % babies had Definite Sepsis, 60% had Probable Sepsis and 16% babies had No Sepsis. Of the neonates with suspected sepsis 24 % had culture positive and 76% were culture negative. Mean PCT level was 13.27± 33.2 ng/ml. The mean PCT levels were higher in Meningitis group (Mean PCT-26.45) than no meningitis group (p value-0.216). The mean PCT levels were higher for Pneumonia group (Mean PCT-13.98) than that of NO Pneumonia group (Mean PCT -12.81). The mean PCT levels were highest in neonates whose TLC>5000 (Mean PCT-18.5) (p value-0.002). The mean PCT levels were higher in all 3 infection groups in neonates with CRP>0.5 mg/dl (positive) than that of neonates with CRP≤0.5 mg/dl (negative). Mean PCT levels were 0.433, 52.22 and 27.95 in no infection, probable infection and definite infection group respectively. (p

value- 0.001) Evaluating CRP as a diagnostic marker for definite neonatal sepsis with cut off value as 0.5mg/dl, had sensitivity of 41.67%, Specificity of 89.47%, Positive Predictive Value of 55.56% and Negative Predictive value of 82.93%. Evaluating PCT as a diagnostic marker for definite neonatal sepsis. The Sensitivity, Specificity, Positive Predictive Value, Negative Predictive Value were 83.3%, 26.32%, 26.32% and 83.3% respectively taking cut-off level of procalcitonin to be >0.5 ng/ml.

### Conclusion

The importance of procalcitonin in diagnosing neonatal septicaemia cannot be denied. But it becomes more useful when it is used along with other investigations for decision making Especially in identifying the group of neonates who may not be infected and may not require antibiotics.

### Biography

Dr. Pradeep Gupta born and brought up in Nepal, currently working as a Paediatrician and Neonatologist in Department of Paediatrics in a non-government hospital in Nepal. He has completed his post-graduation (MD Pediatrics) from PGIMER, Chandigarh, India. He has been awarded scholarship provided by Indian government to pursue my post-graduation in India. He did his undergraduate (MBBS) from BPKIHS, Nepal under full scholarship and he was university topper. He also studied his higher secondary education under scholarship. At a young age of 30 years he has completed his fellowship in Neonatology. During his post-graduation he had developed interest in high-risk infants and children so I did research on different variants of Guillan Barre Syndrome.

He has already presented papers in national and international conferences. He was awarded silver medal in paper presentation on AOCCN Japan 2017. Currently he is doing research on neurological outcome of high risk newborn and impact of developmentally supportive care in newborn.



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