Conclusion: Although survival rates for malignant bone tumours are still unsatisfactory, the functional outcome of extremity tumours after limb salvage procedures are promising.

Presepsin (Soluble CD14 subtype) As a Novel Diagnostic Biomarker of Early-Onset Neonatal Sepsis: Relation to Disease Severity and Clinical Outcome

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Objective: To evaluate serum presepsin (Soluble CD14 subtype) in the diagnosis of early-onset sepsis (EONS) in term neonates and to assess its role in the prediction of disease severity and clinical outcome.

Study design: A total of 40 full-term neonates with EONS and 20 healthy full-term neonates (control group) were included in this study. Prior to the initiation of empirical antibiotic therapy, peripheral blood samples were withdrawn from all neonates to measure: white blood count, C-reactive protein (CRP), blood culture and serum presepsin. Another sample was withdrawn after 72 hours from neonates with EONS for follow up of white blood count, CRP and serum presepsin. Tollner’s sepsis scoring was done initially and after 72 hours. Neonates were followed up for development of septic shock and mortality.

Results: Septic neonates had higher initial serum presepsin level than controls (1000 vs 290 pg/ml respectively; P < 0.001). Serum presepsin with cut off value >480 pg/ml is diagnostic of EONS with sensitivity 100%, specificity 95%. Neonates who later developed septic shock had higher initial serum presepsin level than those who did not develop shock (1500 vs 800 pg/ml respectively; P < 0.001). Neonates who died had higher presepsin level than survivors (3600 vs 900 pg/ml respectively; P < 0.001). There is a statistically significant positive correlation between serum presepsin level and Tollner’s score.

Conclusion: Presepsin is a biomarker with high sensitivity and good specificity for the early diagnosis of EONS in full-term neonates and for prediction of disease severity, septic shock, and mortality.

Mean Platelet Volume in Preterm: A Predictor of Early Onset Neonatal Sepsis

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Background: Early onset sepsis (EOS) is potentially life-threatening problem especially in preterm. EOS diagnosis is challenging due to its non-specific signs and laboratory tests. Mean platelet volume (MPV) has been used as predictor of many inflammatory diseases.

Objectives: To assess the correlation between serial MPV measurement and EOS occurrence in preterm and to determine MPV effectiveness in combination with CRP to diagnose EOS and mortality prediction.

Methods: The study was carried out on 95 preterms with antenatal risk factor for EOS. Blood samples were taken for complete blood count (CBC) including MPV evaluated at birth (cord blood) and at 72 hours of life. CRP analyzed on day 1 and 3, subsequently patients were identified in 2 groups: sepsis (n = 28) and non-sepsis. (n = 67).

Results: MPV was significantly higher on both day 1(10.23±0.92) fl and day 3(10.77±1.16) fl in sepsis group compared to non-sepsis (8.11±0.29) fl and (8.53±0.42) fl, respectively. MPV of 8.6 fl was identified as cut off value in patients probably resulting in sepsis with sensitivity of 97.14% and specificity of 100%. MPV of 10.4 fl was determined as cut off value in patients possibly resulting in death with sensitivity of 70% and specificity of 82.5%. The combination of both MPV and CRP on day 1 resulted in improving performance of MPV with higher negative predictive value (93.1%) and higher sensitivity (80%).

Conclusion: High cord blood and day 3 MPV can be used as surrogate marker for prediction of EOS and associated mortality in preterm.