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The promising rule of neutrophil cd64 as an early diagnostic and prognostic marker in neonatal sepsis

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Background: In spite of extensive research for understanding and treatment of neonatal sepsis, sepsis stills a major source of morbidity and mortality among neonates, it represents a diagnostic burden problem by showing minimal initial nonspecific manifestations. The clinical course can be fulminate and fatal if treatment is not commenced promptly. Neutrophil CD64 showing a promising value as early diagnostic and prognostic marker for neonatal sepsis.

Aims: Our aim was to assess nCD64 as an early predictive and monitoring marker and the best panel of markers that can achieve the highest diagnostic performance in this disease.

Methods: This study conducted over 8-months and included a total of 175 sepsis evaluations, neonates classified into three groups: Documented sepsis group, Clinical sepsis group and Control group. Blood samples were collected for hs-CRP, CBC, nCD64 (done by Flow Cytometry) and blood culture to confirm the diagnosis in the patient's group.

Results: A significant increase in nCD64 was found in sepsis group than in control group. nCD64 had AUC = 0.864 with an optimal cut off at 42% with sensitivity of 86 %, specificity 93.3%, NPV 68.3 %, PPV 97.5 % and efficacy 87.7%. Combination of CRP and CD64 achieve the highest diagnostic and prognostic performance over the other haematological parameters.

Conclusions: We can conclude that nCD64% & CRP combination represent the best early predictor and monitoring panel of markers that can be used conventionally in NICU, Our study suggests that nCD64 % is ready to be incorporated in the routine daily work as a valuable marker.

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