Predictive value of acute phase reactants in early diagnosis of neonatal septicemia

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1- Neonatal septicemia remains a major problem in pediatric infectious diseases. It is responsible for a high percentage of neonatal morbidity and mortality.2- Specific and early diagnosis of neonatal septicemia remains adifficult task.3- The ”Gold Standard” of diagnosis of neonatal septicemia, the (blood culture) can’t be depended upon as the only mean of diagnosis. Culture needs at least 24 hours or more, may be contaminated, and the bacteremic phase of the illness may be missed. In addition, many culture negative neonates had clinical signs highly suggesting septicemia and respond rapidly to antibiotic therapy.4. We are in need for a test, or a group of tests, that is easy, cheap,available, takes short time, and of high sensitivity, specificity,positive and negative predictive values.5- Changes in WBC count were less helpful TLC & ANC differed insignificantly in septic neonates. In spite of high specificity, andpositive predictive value of TLC, the sensitivity and negative predictive value of both TLC & ANC were low.6. Platelets count was highly significant, but has low sensitivity andnegative predictive value.7. The best haematologic change was the ratio of immature to totalneutrophil ratio. I/T > 0.2 is highly significant, has a high sensitivity, specificity, positive and negative predictive values. It is an easy, cheap, available test, and takes a short time.8. ESR, the indicator of acute phase reactants, was highly specific butless sensitive, it has a high positive predictive value, but low negative predictive value.9. CRP, the most rapidly responsive of the acute phase reactants had a high sensitivity, specificity, positive, and negative predictive values. It is easy, available test & takes only minutes.Furthermore, a negative CRP can exclude septicemia.10. AGP, another acute phase reactant, was highly significant in septic newborn infants. It was more sensitive than CRP and has a very near specificity to it. A great advantage of AGP was its prognostic value. Low level of AGP carried a poor prognosis.11. The complement component (C3) may help in the diagnosis of neonatal septicemia. In spite of its low sensitivity and negative predictive value, the specificity and positive predictive value were high. Further investigations are needed for evaluation of other components and their activation fragments as early indicators of neonatal septicemia.12. The sepsis screen was more valid than any single test. It had anexcellent sensitivity & negative predictive value (100%) and a very good specificity & positive predictive value.