SUMMARY

Neonatal septicemia remains a major cause of morbidity and mortality in the neonatal period.

This study was done in the neonatal intensive care unit of Benha University Hospital through the period from Sept. 1996 to June 1997 to clarify the role of IL-6 in early diagnosis of neonatal septicemia compared to other more established measures as HSS, CRP and blood culture.

Our study was carried out on 40 high risk newborn infants. They were followed up clinically and laboratory for 48 hours. Retrogradely, they were classified into two groups, septicemic group (18 babies) and non septicemic group (22 babies), based on the results of the blood culture.

In septicemic group, they were 9 males and 9 females, their mean gestational age was 34.0 ± 2.35 weeks, out of these 18 neonates, 11 were prematures and the remaining 7 were full terms.

Their mean birth weight was 2.250 ± 0.545 kg. 6 cases were delivered by C.S. and 12 cases delivered by NVD.

All the high risk neonates were subjected to history taking, clinical examination and laboratory investigations including CBC, blood culture, CRP and IL-6 in early (cord blood during first 6 hours) and late samples (venous blood after 48 hours). The predominant risk factors were prematurity, perinatal asphyxia, premature rupture of membranes, aspiration of meconium and resuscitation.

The clinical manifestations found in septicemic patients were non specific and the most common clinical manifestations were poor feeding, hypothermia, lethargy, respiratory distress and abdominal distention.

Blood culture was done for all cases. In cord blood (early samples) only 3 cases were positive out of 18 septicemic newborns. In venous blood (late samples) all septicemic cases were positive and the most common organisms isolated were, GBS (4%), E-coli (28%), Staph. aureus (17%) and Klebsiella (11%). A hematological scoring system (HSS) was done for these babies in cord blood (early samples) HSS did not have any significant role in diagnosing early neonatal sepsis as there were no positive cases. But in venous blood (late samples) HSS was positive in 13 cases out of 18 septicemic neonates.

The C-reactive protein in cord blood was found positive in only 4 cases of septicemic neonates with sensitivity (22.2%) and specificity (86.4%). But in venous blood, CRP was found positive in 12 cases of septicemic neonates with sensitivity (66.6%) and specificity (95.4%) in the diagnosis of septicemia.

There was a statistically high significant difference in the serum IL-6 value in septicemic than non septicemic groups in cord and venous blood samples.

In cord blood, IL-6 was positive in 11 septicemic cases with sensitivity (66.6%) and sapesificity (81.8%).

In venous blood, IL-6 was position in 17 septicemic cases with sensitivity (94.4%) and spespesificity (90.4%) in diagnosis of septicemia.

There was no correlation between IL-6 and body weight, gestational age, hematological variables and type of infected organism.

Regarding the comparison of IL-6 of cord blood to other screening tests for early neonatal sepsis, our study showed that there was statistically significant difference between IL-6 and other tests (CRP, blood culture and HSS).

Finally, we conclude that cord blood IL-6 level is an early reliable specific marker of early onset neonatal sepsis.