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 from Oct. 1999 to June 2002 to clarify the role of defensin (HNP-1) in diagnosis of neonatal septicemia compared to other more established measures as HSS, CRP and blood culture.

Our study was carried out on 60 newborns divided into 4 groups :

Group (1) : Septicemia full term newborn (n = 20).

Group (2): Healthy full term newborn (n = 10).

Group (3): Septicemic preterm newborn (n = 20)

Group (4): Uncomplicated preterm newborn (n = 10).

Each of the studied newborns was subjected to history taking, clinical examination and laboratory investigations including CBC, blood culture, CRP, IL-6 and defensin (HNP-1).

The serum IL-6 and defensin (HNP-1) were done again after complete clinical cure confirmed by negative blood culture, negative CRP and HSS less than 3.

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 distension.

In our work, the number of septicemic patients with a hematological score ≥ 3 were 17 cases out of 20 septicemic fullterm so, its sensitivity was 85% while in septicemic preterm the hematological score was positive in 12 cases out of 20, its sensitivity was 60%.

As regard to CRP, it was positive in 18 cases out of 20 septicemic fullterms. Its sensitivity was 90% while in septicemic preterms. It was positive in 15 cases out of 20 septicemic preterms, its sensitivity was 75%.

As regard to IL-6, in septicemic fullterms, it was positive in 19 cases out of 20 cases, with sensitivity of 95%. In septicemic preterms, it was positive in 17 cases out of 20 cases, with sensitivity of 85%.

As regard to defensin, in septicemic fullterms, it was positive in 19 cases out of 20 cases with sensitivity of 95%. In septicemic preterms, it was positive in 18 cases out of 20 cases with sensitivity of 90%.

Our study found that there was a positive correlation between defensin and neutrophil count in septicemic non neutropenic cases while, there was no correlation in septicemic neutropenic cases, as the level of defensin also elevated in septicemic neutropenic neonates. So the defensin concentration can reflect the number and activity of defensin not only in circulation but at the site of infection.

We suggested that serun level of defensin is elevated during infection and can be used as diagnostic marker for neonatal septicemia and that increased circulating defensins are dependent in part on neutrophil count and might play a role in host defense in neonates with septicemia.

Defensin has proven to be the most sensitive and specific of all studied parameters but, it has also been shown to be the last test to return to the normal values after treatment and therefore, its value as a prognosits test in neonatal sepsis is limited in comparison to the other studied parameters.