Summary and conclusion

Preterm birth continues to be one of the major challenges in perinatal medicine. Fortunately, advances in neonatal medicine have led to drastic improvements in survival as well as reductions in morbidity among infants born preterm ***(Goldenberg and Rouse, 1998).*** Practically speaking the incidence of preterm deliveries is difficult to assess, especially in the less developed communities ***(Khalil, 1995).***

Neonatal sepsis, sepsis neonatorum, and neonatal septicemia are terms that have been used to describe the systemic response to infection in newborn infants. Bacteria, viruses, fungi, and rarely protozoa may produce neonatal sepsis ***(Stoll, 2004).***

Classically defined, neonatal sepsis is a clinical syndrome in the first month of life manifested by systemic signs of infection and isolation of a pathogen from the bloodstream (***Edwards and Baker, 2004***).

On earliest presentation, neonatal sepsis may be associated with any gradation of symptoms, from only subtle feeding disturbances to frank septic shock. Often the early signs of sepsis are nonspecific, such as temperature instability, lethargy, poor feeding and unexplained hyperbilirubinaemia (***Baltimore, 2003***).

The neonate ,whether premature or of normal gestational age,is a unique host from an immunologic prespective.Many components of the immune system function less well in neonate compared with adults ,giving rise to the concept of an "immunodeficiency of immaturity".The adaptive significance of these alterations for neonatal survival remains obsecure ***(Schelonka and Infant,1998).***

CD11b is a cell surface antigen of neutrophil and is normally expressed at a very low level on the surface of non-activated cells ***(Ng PC 2006 and, Weirich et al., 1989).*** Its expression on neutrophil cell surface, however, increases substantially within a few minutes after the cell comes into contact with bacteria or endotoxins ***(Simms and, D'Amico 1995).*** This unique property enables CD11b to be used as a potential early warning marker for detection of bacterial infection. Thus, this specific marker could potentially be used for identifying life-threatening infection in preterm infants.

In this study, we attempted to determine the CD11b as one immunological marker for early detection of late onset neonatal sepsis in Extreme Low Birth Weight (ELBW) infants.

The present study conducted on 40 preterm neonates delivered at EL Galaa teaching hospital admitted in the neonatal intensive care unit because of the prematurity and ELBW. The (GA) ranged from 26 weeks to 31 weeks and birth weight of each patient was less than 1000 gm.

We found that There was no significant difference between the mean of the infected and the non-infected groups as regard gestational age (GA), (27.97 $\pm$ 1.33 versus 28.10 $\pm$ 1.29), and birth weight (BW), (840.33, $\pm$85.72 grams versus 857 $\pm$80.28 grams). Also there was no significant between infected and mean non-infected groups as regards sex ($P>0.05$).

Also, we found that there was a high significant ($P<0.01$) association between chorioamnionitis and future development of neonatal sepsis. and a highly significant ($P<0.01$) differences in percent distribution of mothers suffered from PROM between infected and non-infected group.

In our study according the clinical picture of neonatal sepsis, the day of onset ranged between day 6 th-8th days of life.

Regarding routine laboratory work up in our study, we found no significant differences in percent distribution of CRP between Infected and Non-Infected groups(P>0.05).and there was no indication of significant differences in percent distribution of positive Blood culture between infected and non-Infected (P>0.05).

We studied the density of CD11b marker and found that, there was a highly significant increase in the CD b11 levels in the infected group (66.84±20.89) in comparison to the its levels in non-infected group (47.88±4.33) in day one of appearance of signs of infection. there was no significant difference between the CD11b expression in day one and day three in the infected groups.in addidtion, there is a significant relationship between CD11b level and birth weight, while there is a negative significant relationship between CD11b level and gestational age.

From our study to these cases we came to the conclusion that that daily CD11b expression measurements might prove useful in the earlier diagnosis of late-onset infection in ELBW infants, but larger multi-center trials with sufficient number of patients are needed to explore potential utility of such marker.

If the present findings are confirmed in larger studies, the CD11b test may provide a means to reliably reduce the use of antimicrobial drugs in preterm infants. Our results indicate that in ELBW infants with late-onset sepsis CD11b density may increase before the arousal of the clinical suspicion of sepsis. The possibility that earlier diagnosis of sepsis might also improve infant outcome is attractive.