Summary and Conclusions

Neonatal septicemia is considered as 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 September 2009 to January 2010 to clarify the role of activated protein C in predicting mortality in neonatal septicemia.

Our study included 30 cases of neonatal sepsis including both sexes (males & females) with variable gestational ages. We excluded neonate with severe birth asphyxia, congenital anomalies and who received blood transfusion before APC assay.

All cases were subjected to full clinical examination and laboratory investigations including CBC, CRP, blood culture and APC assay.

According to APC level, our cases were divided into:

Group I: Included septic neonates with decreased APC level and they were 20 cases in number.

Group II: included septic neonates with normal APC level and they were 10 cases in number.

Our study proved that the level of APC in the plasma of septicemic neonates is unaffected by body weight or gestational age.

Our study showed that there is no statistically significant difference between the two groups regarding PROM.

Our study showed that CNS manifestations including convulsions were the only significant predictor sign of mortality among septic neonates.

In our study; platelets, TLC and hemoglobin concentration had positive correlation with APC level in septic neonates.

Our study showed that there is statistically significant difference between the two groups regarding CRP.

In our study, we proved that klebsiella pneumonia was the most common organism isolated from septic neonates but MRSA was responsible of the majority of deaths among septic neonates.

Our data provided evidence that activated protein C (APC) level is greatly decreased in septic neonates and its level in plasma is decreased greatly in died cases more than survived cases.

The conclusions drawn from this study are that neonates with severe sepsis are at significantly higher risk of dying if they have low plasma APC levels. Low plasma APC is associated with organ dysfunction, particularly central nervous system.

Recommendations:

The study recommends the following:

- Application of strict aseptic measures during delivery and in NICUs, proper antibiotic prophylaxis for risky mothers to prevent occurrence of neonatal sepsis.
- Detection of APC level in cases of neonatal septicemia will be of great value in predicting the outcome of septic neonates.
- APC level in plasma can be added to sepsis screen for the diagnosis and predicting mortality in neonatal septicemia.