SUMMARY

Hypoxic liver injury is a common condition usually caused by insufficient hepatic perfusion in a patient with liver congestion. The disease is diagnosed on the basis of a rapid increase and subsequent rapid decrease in transaminase values in the absence of other causes of liver disease. Treatment and prognosis depend on the underlying disease.

An increase in liver enzymes after birth asphyxia is well known and frequently seen in NICU. However, few previous studies have addressed the temporal pattern of hepatic enzymes in clinical neonatal asphyxia.

The aim of this work is to study:

1- The occurrence of hypoxic hepatitis in full-term infants after birth asphyxia.

2- The temporal enzyme pattern in asphyxiated full term newborn infants.

3- Whether the degree of the hypoxic hepatitis, as reflected by the rise in aminotransferases, correlates with the severity of the asphyxia.

This study will be conducted on 30 cases of asphyxiated full term newborn infants recruited from neonatal intensive care unit (NICU) in Benha University Hospital and Benha Children's Hospital : Apgar score < 7 at 5 min after birth, gestational age of more than 36 week + two of the following criteria: mild, moderate or severe hypoxic ischemic encephalopathy (HIE), resuscitation with more than 3 min of positive pressure ventilation before stable spontaneous respiration or umbilical cord arterial PH

<7.20. None of the included infants had a primary disease of liver or bacterial sepsis or potentially hepatotoxic drugs therapy. Ten healthy newborn (neonatal period without complications) were taken as a controls.

All cases included in this study were subjected to:

Full Medical history, full clinical examination and laboratory investigation.

The asphyxiated group, subjected to the following laboratory investigation: Serum aspartate aminotransferase (AST), Serum alanine aminotransferase (ALT), Serum lactate dehydrogenase. (LDH), Serum gamma glutamyl transferase (GGT), Serum albumin, Serum bilirubin (total & conjugated) and International normalized ratio (INR).

All these were monitored on postnatal days 1, 3 and 7^{th} day. Pathological values were followed until normal.

The control group subjected to the same laboratory investigation once at the age of 1 to 6 day.

This study showed the following:

- Transient liver dysfunction occur in 70% of asphyxiated cases as regard ALT and 83% as regard AST in our study despite of high capacity and vascularity of the liver, 60% followed temporal enzyme pattern as regard ALT and 56.7% as regard AST.
- Severe birth asphyxia can cause hypoxic hepatitis and furthermore, temporal pattern of aminotransferases.

- The highest increase in serum AST, ALT and LDH was observed after 3 days of delivery then normalized after 6-12 days.
- AST, ALT, and LDH, all returned to normal levels after 6-12 days after only one peak that appeared on the third day.
- A non significant increase in GGT was observed at 3rd and 7th day.
- A non significant change in serum albumin level after follow up period in comparison to the baseline level.
- A significant increase in total and direct bilirubin at third day in comparison to base line level.
- A highly significant decrease in INR at 3rd and 7th day respectively in comparison to the baseline level.
- A highly significant positive correlation between each of ALT, AST, and LDH versus HIE stage. On the other hand, there was a non significant correlation between GGT versus the HIE stage.
- A highly significant negative correlation between each of ALT and AST versus Apgar score.
- A highly significant difference was detected between cases and controls regarding the Apgar score and mode of delivery.