

SERUM BILE ACIDS LEVEL IN CASES OF MECONIUM STAINED LIQUOR IN ELECTIVE CESAREAN SECTIONS AT EL-SHATBY MATERNITY UNIVERSITY HOSPITAL

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Introduction

Hepatic disorders of pregnancy comprise an impressive list of diseases and complications. Intrahepatic cholestasis of pregnancy (ICP), also known as obstetric cholestasis, is considered the most common pregnancy-related liver disease. It takes place in the second or third trimester of gestation and it spontaneously disappears after delivery.

The condition of asymptomatic hypercholanemia of pregnancy (AHP) has recently been reported. AHP is defined as increased serum bile acids in pregnancy in the absence of symptoms and other biochemical markers of ICP or any other hepatobiliary disease. The prevalence of this condition usually increases with gestational age.

Bile acids can pose a highly significant risk for the fetus resulting in several adverse perinatal outcomes such as meconium stained amniotic fluid (MSAF), prematurity, fetal distress and stillbirth.

In ICP, MSAF has been reported in 16%-58% of all cases and up to 100% of cases affected by intrauterine death. It has been found that the risk of MSAF is associated not only with the magnitude of hypercholanemia at diagnosis but also with the early gestational onset of raised maternal serum bile acids. The frequency of MSAF is greater in pregnancies with higher reported levels of maternal serum bile acids.

Aim of the work

The objective of this work was to study the maternal total serum bile acids (TSBA) level in cases of meconium stained amniotic liquor in asymptomatic patients having elective cesarean sections at El-Shatby Maternity University Hospital.

Patients and Methods

Patients:

This case-control study was conducted on 100 asymptomatic patients at EL-Shatby Maternity University Hospital who are admitted for elective caesarean sections after signing their informed consent.

The patients were categorized into 2 groups according to amniotic fluid:

Group (A): 50 cases whose amniotic fluid was **meconium stained**.

Group (B): 50 cases whose amniotic fluid was **non- meconium stained**.

Method: All cases were subjected to the following:

1. Complete history taking (gynecological, obstetric, medical and surgical).
 2. General examination
 3. Laboratory investigations including:
 - Complete blood picture
 - Liver function tests: Alanine aminotransferase (ALT), aspartate aminotransferase (AST) and total bilirubin
 - Renal function tests: serum creatinine and blood urea nitrogen (BUN)
 - Coagulation profile: Prothrombin time, prothrombin activity and INR
 - Total serum bile acids assay using enzymatic method.
 4. Ultrasonographic examination including:
 - Measurement of biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC), femur length (FL).
 - Assessment of amount of liquor and Fetal movements
 - Doppler ultrasound to assess umbilical artery (UA) flow resistance
 5. Cardiotocographic (CTG) study
 6. Delivery by elective cesarean section
 7. Post-natal assessment of newborns:
 - Umbilical cord blood gases (UCBG) analysis by needle aspiration of blood sample from the excised clamped cord segment into preheparinized syringes immediately after delivery.
 - Apgar score at 1 minute and 5 minutes
 - Admission to neonatal intensive care unite (NICU)
- Ethical approval of the study was obtained from the Research and Ethical Committee of Alexandria University. All cases included in the study were properly counseled and signed their informed consent.*

Results

Table: Comparison between the two studied groups according to total serum bile acids (TSBA) level

TSBA level ($\mu\text{mol/L}$)	Group A (n = 50)	Group B (n = 50)	P
Min. – Max.	0.30 – 65.10	1.10 – 19.0	0.099
Mean \pm SD.	7.69 \pm 9.73	4.74 \pm 3.30	

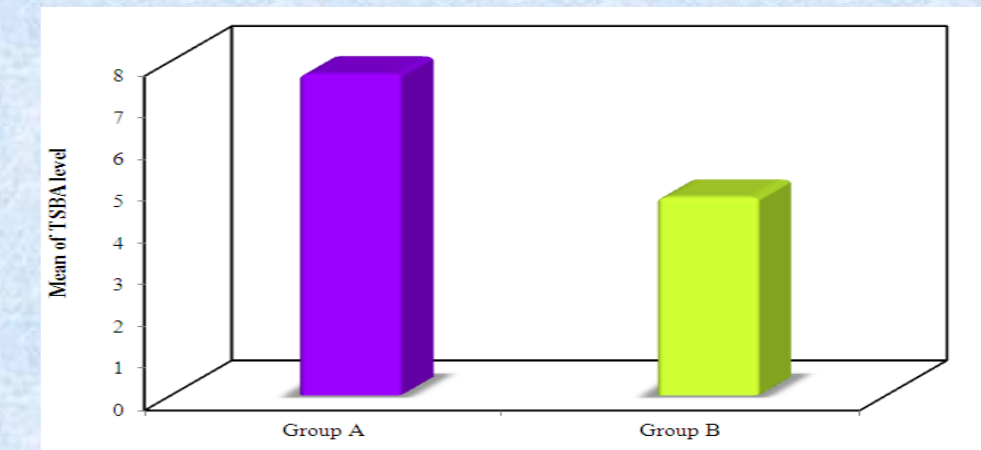


Figure: Comparison between the two studied groups according to TSBA level

There were no statistically significant differences between the two studied groups according to maternal TSBA levels where p value is more than 0.05.

Conclusion

- Asymptomatic hypercholanemia in pregnancy (AHP) could represent an unusual form of intrahepatic cholestasis with pregnancy (ICP).
- Risk of meconium staining of amniotic fluid in asymptomatic pregnant women, who are delivered by caesarean section, isn't increased by presence of elevation in maternal total serum bile acid (TSBA) level (more than $10 \mu\text{mol/l}$).
- Asymptomatic hypercholanemia of pregnancy (AHP) do not have the same risks for fetal distress as patients diagnosed with intrahepatic cholestasis with pregnancy (ICP).
- The maternal total serum bile acids level is usually not high enough to cause fetal distress nor meconium stained liquor in hypercholanemic patients who do not have pruritus or any other symptoms of intrahepatic cholestasis with pregnancy (ICP).