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EFFECT OF OBSTETRIC CHOLESTASIS ON MATERNAL AND FETAL OUTCOME

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Abstract:

Objective: To determine maternal and fetal outcome in patients with obstetric cholestasis Methodology: The descriptive case series study was conducted Obstetrics ***and Gynecology Department of Ibra Regional Hospital, Oman from June 2015 to June 2015,*** *after approval from the ethical committee. The duration of study was from June 2015 to June 2015. In this study, total 100 patients were included. During study period all patients presenting with pruritis and or deranged liver function tests were included. Patients with gestational amenorrhea more than 20 weeks with raised ALT and AST along with normal ultrasound abdomen and no preexisting liver disease were said to have obstetric cholestasis. Maternal and fetal outcome was observed. Maternal outcome includes mode of delivery. Fetal outcome includes prematurity, meconium staining of liquor and fetal distress. Results: Out of 100 patients,38 had spontaneous vaginal deliveries with percentage of 38%.Lower segment caesarean section rate was 62%. 7% of patients had premature delivery. There were 2 intrauterine deaths and Neonatal Intensive Care Unit admission rate was 49%. 45% of patients had meconium staining of liquor.11% of patients went in to postpartum hemorrhage. There were 45 primigravidas and 55 multigravidas. Conclusion: Caesarean section rate was high in this study. Some caesarean sections were due to failed induction of labor but majority were due to fetal distress. Whether this high rate was due to active management of obstetric cholestasis or due to disease process remains to be ascertained. Premature delivery rate was lower in this study and fetal outcome was also good on overall basis despite 49% NICU admission rate.Take home baby rate was high.All babies were well at one month follow up visit.*

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INTRODUCTION:

Obstetric Cholestasis affects 0.7% of pregnancies in whites in United Kingdom and approximately double this proportion of women of south Asian origin.[1]

Pregnancy is a time of great physiological and metabolic changes.[2] Liver disorders complicate pregnancy but rarely result in long term morbidity. Cholestasis of pregnancy is the most common liver condition affecting pregnancy and it classically presents with an itch along with lack of sleep. Laboratory investigations include liver function tests and serum bile acids. It is currently uncertain whether bile acids may be directly responsible for fetal demise.[3] Abnormalities in liver tests occur in 3% of all pregnancies with causes ranging from selflimiting to rapidly fatal.[4] Obstetric cholestasis is a serious issue in pregnancy. Affected women developed itching and occasionally jaundice.[5] In Pakistani and Indian population, it affects 1.2 to 1.5% of women. In Chile,2.4% of all pregnancies are affected with 5% prevalence in women of Araucanian Indian origin.6There is evidence that mutations in genes encoding hepatobiliary transport proteins can predispose to development of cholestasis of pregnancy.4It increases risk of preterm delivery by 1960%,meconium staining of amniotic fluid by 27% and fetal distress by 22 to 41%.7 The rate of caesarean section was found to be 66% in these patients.8 The prevalence may have seasonal cycles and may be more prevalent in winter.

The importance of Obstetric cholestasis lies in associated adverse maternal and fetal outcome. It greatly affects the quality of life of affected mothers by causing significant itching and lack of sleep.[6The] risk of postpartum haemorrhage is also increased threatening the maternal life.[10]

The study was aimed at collecting some local data regarding the incidence, outcome and whether active management is beneficial in cases of obstetric cholestasis.

METHODOLOGY:

This was descriptive case series study conducted ***Obstetrics and Gynecology Department of Ibra Regional Hospital, Oman*** after approval from the ethical committee. The duration of study was from ***June 2015 to June 2016***. Total 100 patients were included in the study. Pregnant women coming through emergency or OPD with gestational amenorrhea from 20 weeks onwards, presenting with pruritis and or deranged liver function tests were included in the study.
Proper history and examination were done including past history, family history and history of gallstones and oral contraceptive intake. Those who have hyperemesis gravidarum, acute cholecystitis, acute hepatitis and drug induced hepatitis were excluded from the study. was observed. A register was maintained and all patients fulfilling inclusion criteria were included. These patients were followed till delivery. Their contact number was also taken.

The data is entered in SPSS 14 and analyzed. The variables like age and parity are presented as mean plus minus standard deviation. Frequency and percentages are presented for variables like mode of delivery, meconium staining of liquor, premature delivery and fetal distress.

RESULTS:

During study, total 100 patients were diagnosed with obstetric cholestasis. 55% of patients were multigravidas and 45% were primigravidas. Maximum number of patients were in the age group of 26 to 30 years. (Table I)

The cardinal symptom of intrahepatic cholestasis of pregnancy was pruritis, present in 60% of women and was more noticed on abdomen.
Using pregnancy specific ranges for Liver function tests, it was found that most frequent abnormality encountered in obstetric cholestasis was elevated transaminases.

There was non-significant rise in serum bilirubin levels i.e. 2 to 3.5mg/dl. Alanine amino transferase levels were significantly raised, upper level being more than 250 mg per decilitre and in 15 patients, levels were more than 500 mg/dl. Serum alkaline phosphatase levels were only raised in 30% of patients and remained in the range of 400 to 600 mg/dl.

Out of 100 patients, 38 had normal vaginal delivery while 62 patients underwent lower segment caesarean section. 7% of women went in to premature labor and deliver before 36 weeks. Intrapartum complications in the form of meconium staining of liquor was observed in 45% of women and 42 of them underwent LSCS due to meconium stained liquor along with CTG abnormalities.

Table I: Distribution of Patients According to Age

Age in years	Number of patients
Less than 20	0
21 to 25	14(14%)
26 to 30	56(56%)
More than 30	30(30%)
Total	100

Informed consent was taken from each patient. Their hepatitis B,C serology and ultrasound abdomen was done. Those who are negative for hepatitis B and C as well as having normal ultrasound abdomen were included. The demographic data regarding age and parity was evaluated. Maternal and fetal outcome 11% of women went in to postpartum haemorrhage although they had normal platelet count and no abnormality in coagulation profile (normal PT/APTT). One of them delivered twin babies. Take home baby rates were 98% and there were two intrauterine deaths of term babies. Neonatal Intensive care admission rate was 49%. (Figure 1)
Summing up, overall maternal and perinatal outcome was good despite being a high rate of abdominal deliveries in these patients.

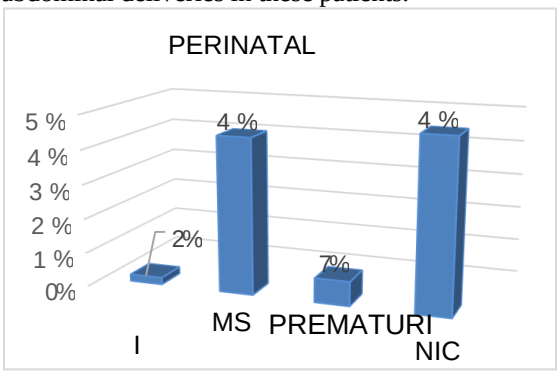

Figure 1. Perinatal Outcome i Obstetric Cholestasis Patients

DISCUSSION:

The aim of my study is to look in to the maternal and fetal outcome of obstetric cholestasis. The main outcome variables were frequency of caesarean section, prematurity, fetal distress, meconium staining of amniotic fluid and frequency of NICU admission of babies.

The mean age of my patients is 28 years, however some studies suggested that its more common in women over the age of 35 years.[11] Most of my patients are multigravidas with percentage of 55% which in in contrast with the findings of some studies whose statistics show that proportion of primigravidas with obstetric cholestasis is 71%.[12] Similarly, in one study,52% of patients with obstetric cholestasis were primigravidas.[13]

In one Pakistani study, the mean age was 24.79[14] which was also consistent with the study of Aloknanda and Rashne who found mean age of 24.7 years.[15]

About 65% of patients had symptoms in winter seasons, whereas 45% of patients had these symptoms during summer. In one study,73% of patients had symptoms in winter.[14]

In our study,60% of patients had elevated bilirubin and LFTs were mildly deranged in most of the patients and these findings were consistent with that of Rasheed and Mazhar.[16]

Mean gestational age of the women was 38 weeks 4 days in our study while Rook et al found mean gestational age of 37 weeks in their study.[17] It was found that patients of obstetric cholestasis often had premature delivery, however in my study premature delivery rate was 7%. Among 100 patients, only 7 had premature delivery while 95 patients delivered at term. In this regard, I found a study in which 144 women with pruritis, normal bile salts and LFTs were compared with next delivered patient without itch who matched with age, ethnicity and parity. The study and control group had similar mean gestational ages at delivery and birth weights, however women with pruritis are more likely to have meconium stained liquor, abnormal CTG and postpartum haemorrhage. Although these patients have normal LFTs, still they have other complications of obstetric cholestasis except premature delivery.[18]

Still there are a number of studies which showed significant risk of premature delivery. In one study, spontaneous premature delivery rate was 10% while 63% of patients had delivery at term.[10]Poncelet et al found premature delivery rate to be 37.2%.[19] Wang et al had showed premature delivery rate of 24%. They evaluated 1210 cases and found that those who delivered premature,96% delivered after 34 weeks,89% of which were caused by LSCS because of abnormal fetal monitoring.[20]

Roncalgia et al conducted a study which showed premature delivery rate of 19.5%.[21]In another study,rate of premature delivery was 35%.[22]In another study conducted in North California,it was found that mean gestational age of delivery was 37 weeks. Mean birth weight was 3126 grams.[17] Rate of Caesarean section in my study was 62%. The common indications of LSCS were fetal distress and meconium staining of amniotic fluid. When I looked in to various studies regarding the outcome of obstetric cholestasis in the past, I found that most studies showed higher rate of caesarean section but whether it is due to active management policy or due to disease process is still not clear. In one study, rate of caesarean section was 85%.[20]
On the contrary, in one study caesarean section rate was similar as in general population.[23]Rosales et al also deduced no increase in caesarean section rate. They studied outcome variables of 63 women who were diagnosed with obstetric cholestasis. Lower caesarean section rates were found in women induced with obstetric cholestasis.[24]

In another study conducted in Ayub teaching hospital Abbottabad, 40% of women diagnosed with obstetric cholestasis underwent caesarean section.[25]

Fetal Distress was found in 82 out of 100 cases with a percentage of 82% in my study. In study conducted at Ayub medical college,33% of patients had intrapartum fetal distress.[25] Both antepartum and intrapartum CTG abnormalities had been reported including fetal bradycardia and tachycardia. A case had also been reported in which there was fetal tachyarrythmias.[11]

In my study,45 patients out of 100 had meconium staining of liquor with a percentage of 45%. In another study, fetal complications had percentage of 33% including respiratory distress syndrome, meconium staining of amniotic fluid and fetal distress.[17]

Meconium staining of amniotic fluid in patients with obstetric cholestasis had percentage of 16-58%.[11] Fisk et al reported meconium staining of amniotic fluid in 45% of cases.[26] Wang et al reported 23% of patients who had meconium staining of liquor.[20]

Maternal morbidity in form of postpartum hemorrhage was found in 11% of patients in my study. Rashid and Mazhar had Postpartum hemorrhage in 20% of patients[16] while Alokanda and Rashne found higher incidence of postpartum haemorrhage. Almost one fourth of these patients had this morbidity.[15]

Overall, maternal and fetal outcome in my study in patients with obstetric cholestasis were good. There was increased rate of fetal distress, meconium staining of amniotic fluid and caesarean section. Most of babies delivered at term and take-home baby rate was very good.

CONCLUSION:

Obstetric cholestasis occurs in the final months of pregnancy with pruritus as a cardinal symptom. It is associated with increased maternal morbidity and perinatal mortality and morbidity.

Close monitoring in antenatal period and induction of labor at 37-38 weeks may improve perinatal outcome.

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