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Original Research Article

Maternal and fetal outcome among pregnant women with jaundice and deranged LFTs attending a tertiary care institute: a prospective study

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ABSTRACT

Background: This was a prospective study to analyses the maternal and fetal outcome among pregnant women with jaundice and deranged LFTs in a tertiary care hospital.
Methods: This was a prospective observational study conducted in the department of Obstetrics and Gynaecology at SLBSGMC Nerchowk for a period of 6 months. The pregnant women with jaundice and deranged LFTs were included in the study after fulfilling inclusion and exclusion criteria. History, clinical examination and relevant investigations done. All patients followed till seven days in post-partum period. The maternal and fetal outcomes were noted.
Results: During study period we encountered 59 pregnant women with deranged LFTs. Majority of women were in primigravida (74.6%) in 20-30 years (55.9%) of age group. Most common symptom was pruritus in 59.3% of women. ICP was the most common cause amongst 64.4% of women. 40.7% 0f women had FTVD and 40.6% had cesarean delivery. AFD with MSL (87.5%) being the most common indication for cesarean delivery amongst these women. A total of 49 (83.1%) of newborn were delivered alive with good Apgar score, 1 (1.7%) was premature, 1 (1.7%) had respiratory distress syndrome (RDS).
Conclusions: In contrary to older Indian studies our study concluded that though liver disease is less common, but on evaluation we found that intra-hepatic cholestasis being the number one cause of deranged LFTs in pregnancy in our hospital. Amongst these patients with high index of suspicion, prompt investigations, early diagnosis and timely management can improve the maternal and perinatal outcome.

Keywords: Jaundice, Deranged LFTs, Pregnancy, Fetal outcome, Maternal outcome, ICP

INTRODUCTION

Hepatic dysfunction has a significant impact on maternal as well as fetal outcome in pregnancy.[1] It is responsible for about 60% of perinatal mortality and 14% maternal mortality.[2] Hepatic dysfunction may occur in 3-10% of pregnancies and jaundice is observed in 0.1%.[3]

The common causes that are associated with hepatic dysfunction during pregnancy are as follows: pre-eclampsia/eclampsia; HELLP syndrome, viral hepatitis, hyperemesis gravidarum, intrahepatic cholestasis of pregnancy (ICP), and acute fatty liver of pregnancy (AFLP).[4]

Till date there is no clearcut national guidelines for may be the reason is variability of etiology and incidence in different parts of country as it is a multifactorial problem like viral hepatitis is common in low socioeconomic strata, chronic liver diseases seen in more affluent societies and

hypertension related issue are quite common in hilly and cold region. By studying the region wise incidence of causes for liver dysfunction appropriate local guidelines can be framed for early detection, management and better outcome of mother and fetus.

We have done a prospective study on by collecting the data of pregnant women with liver dysfunction during pregnancy to find out the true incidence liver dysfunction and percentage of various aetiologies contributing for this in our region.

No such previous data is available on this in our region.

METHODS

Aim and objectives

The aim of the study was to determine prevalence patients with deranged LFTs in pregnancy at our institute. The objectives of this study were (a) to analyze the causes of deranged LFTs in these patients; and (b) analyze the maternal and fetal outcome in these patients.

Type of study

This study was hospital-based observational prospective study.

Study setting

This study was conducted in department of gynecology and obstetrics, SLBSGMC Nerchowk.

Period of study

The study duration was from July 2021 to December 2021.

Study population

All the patients attending at Department of Gynecology and Obstetrics at SLBSGMC Nerchowk, fulfilling the inclusion criteria and willing to participate in the study.

Inclusion criteria

The following criteria were included in the study: (a) all the patients admitted or attending antenatal outdoor patient department at SLBSGMCH, Nerchowk with deranged LFTs irrespective of period of gestation; and (b) willing to participate in the study.

Exclusion criteria

The following criteria were excluded from the study (a) other with abnormal LFTs but also having other medical complications; (b) mothers with chronic liver diseases; and (c) mothers with drug induced liver dysfunctions.

The present study was conducted in the department of Obstetrics and Gynaecology at Shri Lal Bahdur Shashtri Government Medical College, Mandi at Nerchowk, HP; a tertiary care institute which cares for over 3000 institutional deliveries per year. We have recorded the data of all pregnant women with jaundice during the study period for a period of 6 months after commencement of study. After history taking and obtaining the demographic details, the specific symptoms related to liver dysfunction such as pruritus, persistent vomiting, yellowish discoloration of urine, blurring of vision, diminished urine output, upper abdominal discomfort and anorexia were inquired. After general and obstetric examination conducted in all enrolled women. In all cases of severe gestational hypertension and pre-eclampsia, clinical signs and symptoms of ICP, infective hepatitis or other disorders required investigations including LFTs, viral markers, serology for hepatitis, complete blood count, peripheral smear were sent. These women were followed up till delivery and along with their neonates, up to 7-day post-partum

Study variables

A pre-designed proforma was employed for data collection including demographic profile, period of gestation, complaints of the patient, any risk factors, detailed History, General Examination, Obstetric Examination, hematological investigations and USG, mode of delivery, fetal parameters and any intranatal or postnatal complications.

Statistical analysis

For statistical analysis, data were entered into a Microsoft Excel spreadsheet and then analyzed by SPSS (version 17).

Ethical clearance

The study was conducted after obtaining written approval from the Institutional Ethics Committee. Written informed consent will be taken from every study patient.

RESULTS

As per the Table 1 amongst the participants the majority 44 (74.6%) were in age group of 31-40 years. Rest 15 (25.4%) were in 20-30 years age group.

As per the Table 2 amongst total participants majority were primigravida 33 (55.9%) followed by G2 15 (25.4%), G3 were 5 (8.5%), G4 3 (5.1%), G4 2 (3.4%) and 1 (1.7%) was G9.

As per the Table 3 most common symptoms with which participants presented was pruritus in 35 (59.3%) followed by headache/swelling feet in 11 (18.6%) rest yellowish discoloration, nausea/vomiting and abdominal pain each seen in 2 (3.4%) of women. 7 (11.9%) of women presented

without any symptoms. As per the Table 4 diagnosis of the patient amongst total 59 patient's Intrahepatic cholestasis of pregnancy (ICP) stands the commonest etiology in 38 (64.4%), followed by pregnancy induced hypertension (PIH) in 13 (22%). Only 1 (1.7%) patient detected with hepatitis C and in 7 (11.9%) patients no cause was found.

Table 1: Distribution according to age of participants.

Age (years)	N	%
20-30	15	25.4
31-40	44	74.6
Total	59	100.0

Table 2: Distribution according to parity of participants.

Parity	N	%
PGR	33	55.9
G2	15	25.4
G3	5	8.5
G4	3	5.1
G5	2	3.4
G9	1	1.7

Table 3: Distribution according to presenting symptoms of participants.

Symptoms	N	%
Pruritus	35	59.3
Headache/peripheral swelling	11	18.6
None	7	11.9
Yellowish discoloration	2	3.4
Nausea and vomiting	2	3.4
Abdominal pain	2	3.4
Total	59	100.0

Table 4: Distribution according to diagnosis of participants.

Diagnosis	N	%
Acute viral hepatitis	1	1.7
Intrahepatic cholestasis of pregnancy	38	64.4
PIH associated liver dysfunction	13	22.0
Diagnosis obscure	7	11.9
Total	59	100.0

As per the Table 5, Each FTVD and emergency caesarean section seen in 24 (40.7%) patients. Elective cesarean required in 5 (8.5%) of patients, PTVD in 1 (1.7%) of patients and 5 (8.5%) were managed conservatively.

Table 6 further clarify the indications of cesarean delivery, majority of patients 21 (87.5%) undergone cesarean delivery due to acute fetal distress with meconium-stained liquor (AFD and MSL), in 3 (12.5%) reason was failed induction, previous LSCS in 4 (16.7%) and IUGR in 1 (4.2%) of the patients.

As per Table 7, A total of 49 (83.1%) of newborn were delivered alive with good Apgar score, 1 (1.7%) was premature, 1 (1.7%) had respiratory distress syndrome (RDS) and pregnancy was continued in 8 (13.6%) of the patients.

Table 5: Distribution according to perinatal outcome of participants.

Outcome	N	%
FTVD	24	40.7
PTVD	1	1.7
Elective LSCS	5	8.5
Emergency LSCS	24	40.6
Conservative management	5	8.5
Total	59	100.0

Table 6: Distribution according to indication of LSCS.

Indications of LSCS	N	%
AFD and MSL	21	87.5
Failed Induction	3	12.5
IUGR	1	4.2
Previous LSCS	4	16.7
Total	29	100.0

Table 7: Distribution according to neonatal outcome.

Neontal outcome	N	%
Pregnancy continued	8	13.6
Alive	49	83.1
Prematurity	1	1.7
RDS	1	1.7
Total	59	100.0

DISCUSSION

This study was hospital-based observational prospective study conducted in Department of Gynecology and Obstetrics, SLBSGMC Nerchowk from July 2021 to December 2021. All the patients attending at Department of Gynecology and Obstetrics at SLBSGMC Nerchowk, fulfilling the inclusion criteria and willing to participate in the study were enrolled. In our study we analyzed that majority 74.6% were in age group of 31-40 years and 25.4% were in 20-30 years age group. Parity wise, majority of them were primigravida 55.9% followed by G2 which were 25.4%. Majority of our patients were in their third trimester.

Singh et al found that 76.5% cases were between 20 and 30 years of age, 72.9% cases were primigravida, and 90.59% cases presented in third trimester of pregnancy.[5] Dang et al also reported similar findings with majority of patients in 20-30 years age group and 72.3% females were primigravida.[6] In our study, commonest symptom reported

was the pruritus in 59.3% followed by headache in 18.6% of patients. Ruqqia et al reported that all patients (30% mild and 70% severe) had itching as presenting symptom.[7] Tripathi et al reported that 12.5% patients with PIH, hepatitis B and all cases of gallstones presented with non-specific symptom such as vomiting and itching.[8] Yellowish discoloration, pain abdomen and nausea/vomiting were not so common encountered in our study. Also 11.9% of women were found to be asymptomatic.

ICP found to be the commonest etiology in 64.4%, followed by pregnancy induced hypertension (PIH) in 22%. 1.7% patient detected with hepatitis C and in 11.9% patients no cause was found. Mishra et al found that the incidence of abnormal LFT was 0.9%, 81.25 % women with liver dysfunction had pre-eclampsia.[9]

Patra et al reported in their study that 34.7% patients had pre-eclampsia, 11.8% patients had eclampsia, 20.8% patients had IHCP, 3.5% patients had HG, 2.1% patients had AFLP, 5.6% patients had hepatitis A, 3.5% patients had hepatitis B, 9.7% patients had hepatitis E.[10] Each FTVD and emergency cesarean section resulted in 40.7% patients. Elective cesarean was required in 8.5% wof patients, PTVD in 1.7% of patients and 8.5% were managed conservatively with continuation of pregnancy.

Tripathi et al reported that vaginal deliveries were conducted in 63.3% of patients with abnormal LFT whereas remaining 36.7% cases with liver disease underwent caesarean section.[8] Cesarian section rate in cases of liver diseases were comparatively higher (55.2%) in a study by Mbachu et al.[11] Majority 83.1% of newborn were delivered alive with good Apgar score, 1.7% was premature, 1.7% had respiratory distress syndrome (RDS) and pregnancy was continued in 13.6% of the patients.

Fetal outcome was alive and healthy at term in majority 57.5% of cases with liver dysfunction. Perinatal mortality was observed in 5% cases whereas intrauterine growth restriction and preterm birth were observed among 22.5% and 15% cases respectively by Tripathi et al.[8] Kirbak et al found that about 77.7% babies were born alive and 30.9% NICU admission due to severe birth asphyxia and prematurity. Of these, 16.6% died in neonatal period.[12]

Limitation

The limitation of the study is that the sample size was small and such small sample size is not sufficient to draw conclusion. Multicentric trials with large sample size are required in our region. Source of sample was the all referred patients to a tertiary care center which may magnify the burden of some etiologies.

CONCLUSION

ICP being the most common cause of deranged LFTs during pregnancy in third trimester in our hospital-based study. This finding is contradictory to the previous studies conducted in north zone though this was first of its kind study in our region. We require more such multicentric trials with big sample size, still take-home message is to include routine LFTs in antenatal screening tests to detect the liver dysfunctions earliest. This will alarm the obstetrician for timely management of such high-risk pregnancies for better maternal and neonatal outcome.

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