MAK HILL Publications Research Journal of Medical Science

Research Article
doi: 10.59218/makrjms.2023.11.84.88

A Prospective Study on Perinatal Outcome of Obstetric Cholestasis in a Tertiary Care Centre

[1]Rupa Brahma and [2]C.S. Lee

[1,2]Department of Obstetrics and Gynecology B. R. Singh Hospital, Eastern Railway, Kolkata, India

OPEN ACCESS

Key Words
Intrahepatic cholestasis of pregnancy, liver function tests, obstetric cholestasis, pruritus and ursodeoxycholic acid

Corresponding Author
C.S. Lee,
Department of Obstetrics and Gynecology B. R. Singh Hospital, Eastern Railway, Kolkata, India

Author Designation
[1]Senior Resident
[2]Consultant

Received: 22 September 2023
Accepted: 11 October 2023
Published: 12 October 2023

Citation: Rupa Brahma and C.S. Lee 2023. A Prospective Study on Perinatal Outcome of Obstetric Cholestasis in a Tertiary Care Centre. Res. J. Med. Sci., 17: 84-88, doi: 10.59218/makrjms.2023.11.84.88

ABSTRACT

Obstetric cholestasis is an important detectable liver disorder of pregnancy that is the cause of neonatal morbidity. The lack of any monitoring techniques to detect the progression of fetal adversity poses a further risk and leads to importance of detecting and treatment of obstetric cholestasis. Through this study I have tried to detect the maternal outcome as well as the perinatal outcome of obstetric cholestasis, to study the biochemical parameters pertaining to the disease and to study the mode of delivery ascertained for the delivery of the patients. In this prospective study 100 patients presenting with pruritis were studied in the tertiary railway hospital B.R. Singh from duration of June 2018 to December 2019. After ruling out other causes of pruritis and altered liver functions the patients of obstetric cholestasis were studied with their progressive liver function tests and perinatal outcome were tabulated and compared with other studies to compare the management in our institution. In our study we found that out of 26 (26.0%) patients had Elective LUCS, 28 (28.0%) patients had Emergency LUCS was 46 (46.0%) patients had NVD. The maximum indication of was fetal distress and obstetric complication mostly associated with obstetric cholestasis was PIH, in our study 19(19.0%) patients had PIH. 54 (54.0%) patients had MSL. 2 (2.0%) patients had IUFD. Babies of 48 (48.0%) patients had Admission in NICU and babies of 30 (30.0%) patients had Apgar score <7. Obstetric cholestasis is being increasingly associated with maternal complications as PIH and the neonatal mortality and NICU admissions. Our study showed a significant amount of perinatal mortality due to obstetric cholestasis and so adequate antenatal management and timely intervention is to be taken to prevent significant perinatal mortality.

INTRODUCTION

Intrahepatic cholestasis is a multifactorial condition in pregnancy characterized by pruritus in absence of skin rashes and with abnormal liver function tests (LFT), neither of which has an alternate cause and both of which resolve after pregnancy. It carries a substantial recurrence risk and has a tendency toward familial clustering. Its pathogenesis is likely to involve a genetic hypersensitivity to estrogen and autosomal transmission has been suggested. Seasonal variation has been reported in Chile with incidence rates of 12-20%, rest include 9% in Bolivia, 2-3% in Sweden 0.2-0.8% in Australia, 0.2% in France, 0.13% in china and 0.1% in Canada. Reported incidence rates may vary with geographic location and race the incidence of ICP among Indian women has been reported to be around 1%. The condition occurs in all ages and in both primiparous and multiparous women, though in one study is has been shown that woman over 35 are at higher risk. It can recur in subsequent pregnancies and is more common in the presence of multiple gestations. It has also been researched that severe intrahepatic cholestasis of pregnancy is a risk factor for preeclampsia in singleton and twin pregnancy. Pruritus with or without jaundice, is a hallmark feature and involves palms, soles, extremities and trunk but spares mucous membranes. Pruritus persists with fluctuating severity till delivery and disappears after parturition. ICP is associated with significant maternal morbidities. Women with ICP have an increased risk for postpartum hemorrhage, dyslipidemias, preterm labour and operative interfere. Fetus in ICP has been associated with an increased incidence of preterm labour, preterm prelabour rupture of membrane, fetal distress, abnormal CTG, meconium staining, spontaneous intrauterine death. IUFD is seen suddenly in obstetric cholestasis in cases where there is no evidence of preceding intrauterine growth restriction or uteroplacental insufficiency. Serum liver enzymes are an important component of diagnosis but may be normal in one third of cases. Routine tests for fetal monitoring such as cardiotocography and umbilical artery Doppler cannot predict fetal outcome. Stillbirth in obstetric cholestasis has been reported throughout the gestation. Thus, it has been hypothesized that ICP might induce fetal arrhythmia that may lead to stillbirth. Perez et al. reported no deleterious effects of an acute high dose of cholic acid administered to a pregnant woman, which suggests that the harm might require exposure over some period of time.

The aim of this study is to examine antenatal woman with pruritus in 2nd and 3rd trimester with altered liver functions with regular LFT and medication and to observe the neonatal outcome in these pregnancies.

Thus far, both prenatal management and optimal time to delivery remain unclear. No method of fetal monitoring has been shown to either predict adverse perinatal outcomes or reduce their risk. The recommendations of various national professional societies for time to delivery in ICP-complicated pregnancies are also divergent. The Royal College of Obstetrics and Gynecology does not endorse routine early delivery of these pregnancies while the American College of Obstetricians and Gynecologists supports active management induction of labor protocols for ICP[1,2].

MATERIALS AND METHODS

Study area: Department of obstetrics and gynecology, B.R Singh hospital and Centre for medical research, Eastern Railways, Sealdah, Kolkata-700014.

Study population: Booked Antenatal women attending antenatal OPD at BRSH with pruritis in second and third trimester of pregnancy.

Study period: One and half year (June 2018 to December 2019).

Sample size: Sample size taken is 100.

Study design: It is a prospective observational study. The study includes the antenatal patients coming with the complain of pruritis with altered liver function tests. Necessary information is being collected after taking informed consent by face to face interview, antenatal records of the patients and recording their perinatal outcome at the time of discharge.

Inclusion criteria: Antenatal woman with the complain of pruritis during their on-going antenatal check-ups in BRSH and delivering at BRSH.

Exclusion criteria:

- Loss of follow up in antenatal check-up
- The presence of other diseases such as acute and chronic liver diseases
- Ongoing viral infections affecting the liver
- Symptomatic cholelithiasis
- Skin diseases and allergic disorders
- The presence of other co morbidities eg. gestational hypertension, gestational diabetes

RESULTS

In our study 16 (16.0%) patients were 21-25 years old. 46 (46.0%) patients were 26-30 years old. 32 (32.0%) patients were 31-35 years old and 6 (6.0%) patients were >36 years old. In above table showed that the mean Age (Mean±SD) of patients was 29.2000±3.9415. In our study, 49 (49.0%) patients had

P0+0, 14 (14.0%) patients had P0+l, 5 (5.0%) patients had P0+2, 1 (1.0%) patients had P0+3, 15 (15.0%) patients had P1+0, 8 (8.0%) patients had Pl+l, 2 (2.0%) patients had Pl+3, 4 (4.0%) patients had P2+0 and 2 (2.0%) patient had P2+1. The value of z is 5.1539.

In our study, 7 (7.0%) patients had involment of abdomen, 14 (14.0%) patients had involment of abdomen, palm and soles, 77 (77.0%) patients had Palm and sole involment and 2 (2.0%) patient had whole body affection. In our study, 2 (2.0%) patients had Liver Involvement in ICP patient.

In our study, 100 (100.0%) patients had relieved by ursodeoxycholic acid. ln our study, 24 (24.0%) patients had Elective Lucs, 19 (19.0%) patients had EM Lucs, 42 (42.0%) patients had Induction by Dinoprostone GEL, 2 (2.0%) patients had Induction by Misoprostol and 13 (12.0%) patients had Spontaneous NVD.

In our study, 4 (4.0%) patients had GDM, 1 (1.0%) patients had GDM, Hypothyroid, 2 (2.0%) patients had GDM, PIH, 6(6.0%) patients had Hypothyroid, 2 (2.0%) patients had IUGR,19 (19.0%) patients had PlH,1 (1.0%) patients had Placenta Previa, 2 (2.0%) patients had Post CS, 8 (8.0%) patients had Pprom, 4 (4.0%) patients had Preeclampsia and 1 (1.0%) patient had Prom.

In our study, 46 (46.0%) patients had clear liquor, 54 (54.0%) patients had MSL. In our study, 2 (2.0%) patients had IUFD.

In our study, 48 (48.0%) patients had Admission in NICU. In our study, 30 (30.0%) patients had Apgar score <7.

In the mean Gestational Age at Onset of Prurities (Works) of patients was 34.9900±1.0963, mean SGPT Level of patients was 200.9220±75.9819, mean Serum Bile Level of patients was 0.8340±0.I064, mean SGOT Level of patients was 169.9900±56.5945, mean ALP Level of patients was 234.5900±58.7905 and mean Gestational Age at Delivery (Works) of patients was 38.0250±.3406.

Table 1: Distribution of site of onset of purities and USG showing liver involvement in ICP patient

Site of onset of purities	Frequency	Percentage
Abdomen	7	7.0
Abdomcn, palm and soles	14	14.0
Pahnandsole	77	77.0
Whole body	2	2.0
Total	100	100.0
USG showing liver involvement in ICP patient		
No	98	98.0
Yes	2	2.0
Total	100	100.0

Table 2: Distribution of mode of termination and mode of delivery

Mode of termination	Frequency	Percentage
Elective lucs	24	24.0
Emlucs	19	19.0
Induction by dinoprostone GEL	42	42.0
Induction by misoprostol	2	2.0
Spontaneous NVD	13	13.0
Total	100	100.0
Mode of delivery		
Elective lucs	26	26.0
Emlucs	28	28.0
NVD	46	46.0
Total	100	100.0

Table 3: Distribution of pregnancy complications

pregnancy complications	Frequency	Percentage
GDM	4	4.0
GDM, Hypothyroid	I	1.0
GDM, PIH	2	2.0
Hypothyroid	6	6.0
IUFD	2	2.0
IUGR	2	2.0
PIH	19	19.0
Placenta previa	I	1.0
prom	8	8.0
Preeclampsia	4	4.0
Prom	I	1.0
NIL	50	50.0
Total	100	100.0

Table 4: Distribution of admission in NICU and apgar score <7

Admission in NICU	Frequency	Percentage
Not applicable	2	2.0
No	50	50.0
Yes	48	48.0
Total	100	100.0
Apgar score <7		
Not applicable	2	2.0
No	68	68.0
Yes	30	30.0
Total	100	100.0

DISCUSSIONS

Intra hepatic cholestasis of pregnancy has remained an enigmatic problem till date. The pathophysiology remains unclear and there is no such guideline for proper management of the condition. On the other hand the perinatal complications in the form of meconium staining of liquor, pre term delivery and NICU admission remains a matter of concern.

In this prospective study we have studied 1OO antenatal patients with obstetric cholestasis and studied the perinatal outcome of babies delivered to the patients.

Our study showed the maximum affected age group in patients were between 26-30 years amounting to 49 (49.0%) patients and there was about equal affection in primi-para and multipara. In a

Table 5: Distribution of mean all parameter SGPT level, serum bilirubin level, SGOT level and ALP level

Gestational age	No.	Mean	SD	Minimum Ill	Maximum	Median
At onset of prurities (weeks)	100	34.9900	1.0963	33.0000	37.0000	35.0000
SGPT level	100	200.9220	75.9819	87.0000	473.4000	200.0000
Serum bilirubin level	100	0.8340	0.1064	0.4000	1.2000	0.8000
SGOT level	100	169.9900	56.5945	78.0000	344.0000	166.5000
ALP level	100	234.5900	58.7905	123.0000	542.0000	230.5000
Gestational age at delivery (weeks)	100	38.0250	0.3406	37.0000	39.0000	38.0000

study conducted by Padmaja *et al*.[3] the mean age of the patients was 28.7 years. Hak and Sharma[4] found that maximum number of patients were primi-gravida and in age group of 21-25 years. Another study conducted by Ray and Balsara[5] the mean age was found to be 24.7 years. However in another study conducted by WormaJd *et al*.[6] the median age of patients were found to be 33 years. The mean age in Indian study was similar to our study. In the study conducted by Padmaja *et al*.[3] 68.9% and Ray *et al*.[5] 71.8% of the patients were found to be affected by obstetric cholestasis in the first pregnancy.

In case of ICP the onset of pruritus is mainly encountered in the third trimester. In our study mean age of onset of pruritus is 34.99 weeks. Padmaja *et al.*[3] found onset of pruritus mainly in the 3rd trimester (7J.J %) and Ray et al5 found onset of pruritus in 84.3% of patients after 30 weeks of gestation.

In ICP there is distressing pruritus mainly in the abdomen and palms and soles. In our study palms and soles were affected in 77% of cases followed by abdomen, palm and sole (14%). Padmaja *et al*.[3] found affection of palms and soles in 37.8% cases and Ray *et al*.[5] found affection in 46.8% of case. This had been found similar to our study. Kenyon *et al*.[7] found that Pruritus was usually severe and generalised and commonly worst on the palms and/or soles of the feet.

SGOT, SGPT, ALP parameters of LFT were increased in our study. The bile acid was not studied due to its high cost and unavaibility of the test facilities in our hospital. In our study the mean level of SGOT is 169.99 and SGPT is 200.922. The mean level of Alkaline phosphatases 234.59. In the study conducted by Padmaja *et al*.[3] SGOT and SGPT levels increased in >95% of ca e. However, Alkaline phosphatase level increased in only 15.8% case and S. Bilirubin in J8.45% of cases. Serum bilirubin (p = 0.002), liver enzymes (p<0.0001 for all) and Bile acids (p = 0.001) were significantly elevated in IHCP subjects compared to controls.

Routinely Ursodeoxycholic acid had been given to all the patients of ICP in our study. In our study 100% of patients had improvement in symptoms with UDCA at a dose of 300 mg thrice daily. Padmaja *et al*.[3] found a reduction rate of 94.4% with UDCA.140 Ray et al [5]has found a reduction in itching in 75% cases with UDCA.5 In another study conducted by Chappel *et al*.[8] had found a reduction rate of itching by 95% with UDCA. So Ursodeoxycholic acid found to be very effective in our as well as others studies and is comparable.

There is recommendation for delivery between 37-38 weeks in patients with ICP. In our study induction of labour was done in 42% of case. In the study conducted by Wormald *et al*.[6] induction of labour was done in 49.3% cases. It was similar to the percentage in which induction was done as in our study. Padmaja *et al*.[3] found 62.2% delivery rate at 37 weeks of gestation WormaJd *et al*.[6] found the median gestational age of delivery at 37 weeks. This has been found comparable to our study.

In our study we found that out of 26 (26.0%) patients who had Elective LUCS, 28 (28.0%) patients had Emergency LUCS and 46 (46.0%) patients had NVD. The maximum indication of was fetal distress and obstetric complication mostly associated with obstetric cholestasis was PIH, in our study 19 (19.0%) patients and had PIH and 54 (54.0%) patients had MSL. 2 (2.0%) patients had IUFD. Babies of 48 (48.0%) patients had Admission in NICU and babies of 30 (30.0%) patients had Apgar score<7.

In the study conducted by Ray and Sharma[5] meconium staining of liquor was seen in 32.2% and NICU admission rate was 40.6%. However in their study Abnormal CTG rate was higher i.e 35%. In the study conducted by Wormald *et al*.[6] meconium staining of liquor seen in 21.9% of cases and NICU admission rate was 15.1%.

Hak and Sharma[4] found that 28.82% had LSCS due to fetal distress i.e. meconium and fetal bradycardia. 11patients had PPH. IUD was seen in 2.67% of patients and 16% of neonates required NICU admission and out of 24 NICU admissions, 62.5% were due to meconium aspiration syndrome.

Kenyon *et al*.[7] found that Pruritus was usually severe and generalised and commonly worst on the palms and/or soles of the feet. There were no stillbirths or perinatal deaths. Twenty-five women required caesarean section (36%); only four (16%) were for fetal distress. Twelve women (17%) delivered before 37 weeks, of which eight (67%) were iatrogenic. Ten (14%) infants required admission to the special care baby unit of which four (40%) were ventilated. Policies of active management result in increased intervention and associated complications. This must be balanced against possible reductions in perinatal mortality.

Our study showed that the meconium staining of liquor and NICU admissions of babies born to mothers were slightly higher than other studies whereas the IUD rate was comparable with other studies.

CONCLUSION

Obstetric cholestasis is a disease which is highly under reported. It was once considered to be a benign condition but it is not so. Its significance has been highlighted only recently due to associated maternal and perinatal morbidity and mortality. In my study I have tried to study all the antenatal mothers presenting with obstetric cholestasis for a period June 2018-December 2019 and performed a prospective study for the perinatal outcome of those patients.

From our study we come to the conclusion that a significant amount of perinatal morbidity is associated with obstetric cholestasis which requires close antenatal monitoring and active management of patients with ICP.

REFERENCES

1. Reyes, H., 2007. The enigma of intrahepatic cholestasis of pregnancy: Lessons from chile. Hepatolo., 2: 87-96.
2. Reyes, H. and F. Simon, 1993. Intrahepatic cholestasis of pregnancy: An estrogen-related disease. Seminars. Liver. Dis., 13: 289-300.
3. Padmaja, M., P. Bhaskar, G.J. Kumar, R. Seetha and C. Mahasweta, 2010. A study of obstetric cholestasis. J. Obstet. Gynecol. India., 60: 225-231.
4. Hak, J. and N. Sharma, 2015. Maternal and perinatal outcome m patients with cholestasis of pregnancy. JK. Sci., Vol. 17.
5. Ray, A. and R. Balsara, 2005. Cholestasis of pregnancy. J. Obstetric. Gynecol. India., 55: 247-250.
6. Wormald, B.W., M. Naidu, C. Long, D. Simms, I. Ataullah, 2010. Obstetric outcomes for women with raised bile acids: A 5-year review at Kingston hospital. Arch. Dis. Childhood-Fetal. Neonatal. Edition., Vol. 95.
7. Kenyon, A.P., C.N. Piercy, J. Girling, C. Williamson, R.M. Tribe and A.H. Shennan, 2002. Obstetric cholestasis, outcome with active management: A series of 70 cases. BJOG: An Int. J. Obstet. Gynaecol., 109: 282-288.
8. Chappell, L.C., V. Gurung, J. Chambers, P.T. Seed, C. Williamson and J.G. Thornton, 2011. Pitch: Two randomised controlled trials in obstetric cholestasis: Ursodeoxycholic acid versus placebo and early delivery versus expectant management. Arch. Dis. Childhood. Fetal. Neonatal. Edition., 96: Fa110-Fa111.