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RESEARCH ARTICLE

MATERNAL OUTCOME IN CHOLESTASIS OF PREGNANCY IN PATIENTS ATTENDING A TERTIARY CARE HOSPITAL IN NORTH INDIA

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ABSTRACT

Introduction: Cholestasis of pregnancy is also known as jaundice of pregnancy, intrahepatic cholestasis of pregnancy, obstetric cholestasis or prurigo gravidarum. The condition manifests clinically in second or third trimester with generalised pruritus. Although maternal outcome is invariably good an increased fetal risk has been reported, namely preterm delivery, low birth weight babies, bradycardia, meconium staining of amniotic fluid, fetal distress, intrauterine death of fetus and increased perinatal mortality. All women should be closely monitored during the third trimester, especially, in case of twin pregnancy, if the onset of intrahepatic cholestasis is before 32 weeks of gestation, or with history of previous stillbirth. **Objective**: To determine maternal outcome in cholestasis of pregnancy. **Methodology**: This study was conducted in the depaerment of obstetrics and gynaecology.150 patients were enrolled from the outpatient department as well as from those admitted in the labour room with the history of intrahepatic cholestasis of pregnancy. **Results:** On analysis of data, mean gestational age at delivery was 38.14 weeks. About 75% patients delivered at term, whereas 10% had preterm delivery. 51% patients had spontaneous onset of labour and in 39% patients induction was done by different methods depending on the Bishop's score. 59.3%patients had vaginal delivery, LSCS rate was 40.0% and instrumental delivery rate was .7%. High LSCS rate was because of meconium, fetal distress and previous LSCS. Intrapartum complications were present in 48.67% patients in the form of meconium staining of amniotic fluid in 24.67% patients, preterm delivery in 10% patients, fetal distress in 8.7% patients. Post partum complications were noted in 8% patients in the form of PPH (7.3%) and hematoma in (.7%). **Conclusion:** Cholestasis of pregnancy causes maternal pruritus with impaired liver function tests and raised serum bile acids. Maternal morbidity is increased in terms of increased LSCS rates and discomfort due to pruritus. A timely intervention at 37-38 weeks will reduce the adverse perinatal outcome.

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INTRODUCTION

Cholestasis of pregnancy is also known as jaundice of pregnancy, intrahepatic cholestasis of pregnancy, obstetric cholestasis or prurigo gravidarum. It is a medical condition in which cholestasis occurs during pregnancy (Rapini et al., 2007). Prevalence in women of Indian origin is 5%. Cholestasis of pregnancy is caused by an impairment of bile secretion in the liver. As the bile backs up in the liver, the level of bile acids increases in the bloodstream. The bile acids are deposited in the maternal tissues like skin, causing intense pruritus (Heather Brannon, 2004). Obstetric cholestasis clinically manifests in the 2nd or 3rd trimester of pregnancy with generalized pruritus but without any skin rash (McDonald, 2002).

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Pruritus begins in the palms and soles, with progression to the arms and legs, eventually, reaching the trunk and face. Pruritus is most severe at night. Jaundice is relatively uncommon, complicating only the most severe and prolonged cases (Milkiewiez et al., 2002). The condition worsens as pregnancy proceeds and there is spontaneous relief of symptoms and signs within two to three weeks after delivery (Ching et al., 2003). Although maternal outcome is invariably good, an increased fetal risk has been reported, namely preterm delivery, low birth weight babies, bradycardia, meconium staining of liquor, fetal distress, intrauterine death of fetus and increased perinatal mortality (Glantz et al., 2004). The mechanism of premature labour and meconium staining of liquor has been attributed to elevated bile acids in circulation. An abrupt reduction of oxygenated blood flow at the placental chorionic surface leading to fetal asphyxia may lead to fetal distress and sudden IUD (Handbook of Obstetric Medicine,

2006). Thus, fetal demise is one of an acute anoxic event rather than chronic utero-placental insufficiency (Progress in Obstetric and Gynaecology, 2005). At present, it is not possible to predict which pregnancies are at risk of the fetal complications of obstetric cholestasis (Catherine Willliamson et al., 2004).

Aims and objectives: To determine maternal outcome in cholestasis of pregnancy.

MATERIAL AND METHODS

The present study was conducted in the Department of Obstetrics and Gynaecology, Lalla Ded Hospital Srinagar. The study group included 150 patients which were enrolled from the outpatient department as well as from the patients admitted in the labour room with the history of IHCP.

Inclusion Criteria

- Patients with pruritus.
- Gestational age >28 weeks (calculated from last menstrual period and confirmed on ultrasound).
- Abnormal liver function tests.

Exclusion criteria

- Viral hepatitis
- Gall stones
- Hypertensive disorders of pregnancy
- Presence of skin lesions

From every patient, following specific information was collected apart from detailed history taking.

- History of pruritus in previous pregnancy.
- History of oral contraceptive intake.
- Family history of IHCP.
- Previous history of unexplained IUD at term.
- Mode of onset of pruritus, gestational age at the onset of pruritus.

Detailed general, systemic and obstetric examination was done Following investigations were done after taking informed consent from the patient which included:

- Blood Group
- HB, BT, CT
- LFT'S
- RFT'S
- PT, PTI, PLATELET COUNT
- URINE FOR ALBUMIN
- Hbs Ag, anti-HCV, HAV. HEV (in patients with jaundice)
- HIV
- VDRL
- Blood sugar
- USG for fetal well being and hepatobiliary system.

- Women were followed upto two weeks after delivery.
- Maternal outcome was noted in terms of

- Gestational age at delivery.
- Onset of labour:
  - Spontaneous
  - Induced
- Mode of delivery:
  - Vaginal
  - Instrumental
  - LSCS
- Intrapartum complications
- Meconium staining of amniotic fluid, preterm labour, accidental hemorrhage.
- Postpartum complications
  - Postpartum hemorrhage, DIC, Sepsis

Statistical analysis: Statistical software (SPSS Version 20.0) and Microsoft excel was used. Data was analyzed with the help of descriptive statistics, mean, standard deviation and percentage and presented by bar and pie diagrams.

RESULTS

Table 1. Distribution of patients according to gestational age at delivery

GA (in Weeks)	NO.	%AGE
<37	16	10
37-40	112	75
>40	22	15
Total	150	100

75% patients delivered at term.
10% had preterm delivery.
Mean gestational age at delivery was 38.14 weeks

Table 2. Distribution of patients according to liver function tests

VARIABLE		NO.	%AGE
Bilirubin (mg/dl)	0.2-0.6	62	41.33
	0.6-1.0	45	30.00
	1-1.4	33	22.00
	≥1.4	10	6.67
S.AST (IU/L)	0-100	46	30.67
	100-200	59	39.33
	200-300	30	20.00
	≥300	15	10.00
S.ALT (IU/L)	0-100	63	42.00
	100-200	50	33.33
	200-300	27	18.00
	≥300	10	6.67
S.ALP (IU/L)	0-200	24	16.00
	200-400	53	35.33
	400-600	57	38.00
	≥600	16	10.67

Jaundice was noticed in 28.67%.
Maximum 39.33% patients had AST in the range of 100-200.
Maximum 42% patients had ALT in the range of 0-100.

Table 3. Distribution of patients according to the modes of onset of labour

Mode of onset of labour	NO.	%AGE
spontaneous	77	51
induced	58	39
elective lscs	15	10
total	150	100

77 (51%) patients had spontaneous onset of labour.
Induction of labour was done in 58 (39%) patients.
15 (10%) patients underwent elective LSCS because of associated obstetric indications

Table 4. distribution of patients according to mode of delivery

Mode of delivery	No.	% Age
Vaginal delivery	89	59.3
Lscs*	60	40.0
Ventouse delivery	1	0.7
Total	150	100

15* were elective LSCS.
59.3% had vaginal delivery.
LSCS was done in 60 (40%) patient.
0.7% of the patients had instrumental delivery.

Table 5. distribution of patients according to intrapartum complications

Intrapartum complications	No.	% Age
Meconium	37	24.67
Preterm delivery	15	10.00
Abruption	2	1.33
Fetal distress	10	6.67
Adherent placenta	1	0.67
Others*	8	5.33
Absent	77	51.33

*NPOL, FAILED INDUCTION, IMPENDING RUPTURE

- Intrapartum complications were observed in 73 (48.67%) patients.
- Meconium stained amniotic fluid was seen in 37 (24.67%) patients.
- 10% patients had preterm delivery.

Table 6. distribution of patients according to post-partum complications

Post-partum complications	No.	% Age
Pph	11	7.3
Hematoma	1	0.7
Absent	138	92.0
Total	150	100

138 (92%) had no complications in the post partum.
11 (7.3%) patients had PPH.

DISCUSSION

The study was conducted to detrmine maternal outcome in patients with cholestasis of pregnancy.150 patients were studied. Out of 150 patients, 112 (75%) delivered at term, 10% patients had preterm delivery and all of these were spontaneous in onset (Table-1). Mean gestational age at delivery was 38 weeks 14 days. Our results were consistent with Sabeena Rasheed et al 2009 they found mean gestational age at delivery to be 37.5 ± 1.55 weeks with a range of 35-41 weeks. Jaundice was present in 43 (28.67%). AST in maximum number of patients 59(39.33%) were in the range of 100-200, ALT in maximum patients 63(42%) were in the range of 0-100. ALP in maximum patients 57(38%) were in the range of 400-600 (Table- 2). Although serum bile acids are considered to be very sensitive indicator of obstetric cholestasis, but as bile acid assessment was not available locally, we could not determine the levels in our patients. The above results are consistent with Sabeena Rasheed et al 2009, they found liver functions deranged in 73.3% and 22% had elevated bilirubin.

Maximum number of patients 77 (51%) had spontaneous onset of labour, induction of labour was done in 58 (39%) while 15 (10%) had elective LSCS (Table-3). Most common indication for induction of labour was cholestasis of pregnancy. Similar findings were seen by Ray Alokananda et al 2005, in their study maximum number of patients 68.75% had spontaneous onset of labour, induction of labour was done in 28.1% patients. Two most common indications of induction were postdated pregnancy & worsening symptoms. Maximum number of patients i.e., 89(59.3%) had vaginal delivery. LSCS was done in 60(40%) patients (Table-4). Out of 60 LSCS, 15(25%) were elective because of obstetric indications like malpresentations, previous LSCS, CPD etc & 48(75%) were emergency LSCS. Most of the emergency LSCS were done at ≥ 38 weeks GA and hence, were due to fetal distress. Fetal distress was more common after 38 weeks of gestation. Instrumental delivery rate was 0.7%. The above result is consistent Ray Alokananda et al 2005, they found LSCS rate to be 31.2%, however, and instrumental delivery rate was 25% which was higher than in our study. 77/150 (51.33%) patients had uneventful intrapartum period while 73/150 (48.67%) patients had intrapartum complications. 37 (24.7%) had meconium staining of amniotic fluid, increased stimulation of colonic motility by bile acids and fetal distress was the cause of increased incidence of meconium staining. Preterm delivery was present in 15(10%) and 2(1.3%) patients had abruption (Table-5).

Our results were consistent with M Padmaja et al 2010[13], they found higher incidence of preterm delivery 24.4% & meconium staining of amniotic fluid 17.7%. Abnormal CTG was seen in 4.4%.Postpartum complications were present in 12(8.0%) patients. Most common complication was PPH 11/150(7.3%) (Table-6). 5 among these required blood transfusion. Incidence of PPH was comparatively less in our study because of routine administration of injection Vitamin K to the patients with IHCP and because of active management of third stage of labour. M Padmaja et al 2010[13] found no case of PPH in his study.

Conclusion

Cholestasis of pregnancy is a relatively common cause of hepatic impairment in pregnancy. It has a complex etiology with genetic, hormonal and environmental components. IHCP causes maternal pruritus with impaired liver functions and raise serum bile acids. Pruritus is the most common symptom and is usually seen in third trimester of pregnancy. Maternal cholestasis is transient with post natal resolution, although the affected women have increased rates of hepatobiliary disorders in later life. Maternal morbidity is increased in terms of increased LSCS rates and discomfort due to pruritus. Cholestasis of pregnancy is assosciated with adverse perinatal outcome. There is increased risk of meconium staining of amniotic fluid, fetal distress, spontaneous preterm delivery and sudden IUDs at term. Affected pregnancies merit closer surveillance.

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