

Study of cases of pregnancy with jaundice in a tertiary care teaching hospital in Western India

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ABSTRACT

Objective: This study was undertaken to evaluate incidence, etiological factors and fetomaternal outcome in pregnancy with jaundice in a tertiary care teaching hospital. **Methods:** Antenatal patients with jaundice admitted to Civil hospital, Ahmedabad between January 2018 to January 2020 were included in the study. **Results:** Incidence of jaundice in pregnancy was found to be 0.65% in present study. Most common cause of jaundice was viral hepatitis. Most commonly involved patients belonged to age group 25 - 29 years, primigravida belonging to lower socioeconomic class presenting with yellowish discolouration of sclera and/or urine as most common presenting symptom with altered liver enzyme levels. DIC, PPH were amongst the most common factors causing morbidity. Neonatal hyperbilirubinemia, perinatal mortality, meconium stained liquor, fetal distress were main causes involved in perinatal outcome and morbidity. The maternal mortality rate was 21% and perinatal mortality rate was 23 %. **Conclusion:** Jaundice in pregnancy has adverse fetomaternal outcome. Improvement in health awareness, education & routine and regular antenatal check-up, early referrals can result in early diagnosis and treatment of jaundice in pregnancy thus reducing the fetal and maternal morbidity and mortality.

Keywords: Jaundice, fetomaternal outcome, pregnancy.

Jaundice is defined as yellowish discolouration of skin and mucous membranes due to increase in serum bilirubin. Pregnancy being a physiological condition sees many alterations in the hepatobiliary physiology and metabolism which if crosses the set threshold may turn into life-threatening pathological picture which may carry grave consequences for both mother and baby, as well as impose great challenge over the treating obstetrician. Since it most commonly involves women from age group 25-29 years and that too primigravida patients, a important section of society is at stake because of this disease and that is why it needs a serious attention and intervention. 58% patients were affected with infective hepatitis and 21% is the rate of mortality caused by it, again which is an alarming situation for any health setup worldwide. Jaundice in pregnancy carries a grave prognosis for both the fetus and the mother ¹.

Our study group included a wide range of pregnant

women including those, who were already having liver disorders at the time of conception, for example patients having cirrhosis, chronic active hepatitis etc. Another range of patients under study were those who were diagnosed coincidentally with liver disorders like patients with viral hepatitis (58%), drug induced hepatitis, cholecystitis. These may be coincidental finding but not exclusive. Another example of liver disorder i.e. HELLP (10% cases) syndrome occurs only in pregnancy. A huge spectrum of diseases can be enumerated out of which some are peculiar to pregnancy viz., acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy and jaundice complicating toxemia of pregnancy and some other group of diseases is found to be concurrent with pregnancy due to infective pathology like viral hepatitis or due to gallstones or the reason may be drug administered during pregnancy ². Henceforth the aim of the present study was to enumerate incidence, etiological factors

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and fetomaternal outcome in pregnancies complicated by jaundice in the respective study group.

Materials and methods

The study was conducted at Civil hospital, Ahmedabad (Gujarat) in India from January 2018 to January 2020.

Inclusion criteria: All the patients admitted as diagnosed cases or diagnosed in this institution on investigations were included in this study.

A systematic approach to the diagnosis depending upon the presenting symptomatology was made at the onset of the disease. 100 antenatal patients with jaundice (serum bilirubin > 3 mg %) were included in the study, prospectively followed in antenatal, intranatal and postnatal period & results were recorded and analysed. After proper and detailed history and thorough clinical examination, investigations including routine CBC, urine, blood sugar, liver function tests (LFT), viral markers (hepatitis A, HBsAg for hepatitis B, hepatitis C), hepatitis E and coagulation profile were sent. The patients were managed by multidisciplinary approach of obstetrics and internal medicine department.

Results and observations

The incidence of jaundice in pregnancy in our study was 0.65%. The most common age groups were between 25-29 years followed by 21-24 years. Most patients were unbooked (79%) belonged to lower socioeconomic status (65%), hailed from rural setup (68%) and primigravida (46%) (table 1).

Table 1: Demographical data

Parameters		No. of patients	Percentage (%)
Age(years)	≤20	04	4.0
	21 – 24	36	36.0
	25 – 29	39	39.0
	≥ 30	21	21.0
Gravida	Primi Gravida	46	46.0
	Second Gravida	29	29.0
	Multi Gravida	25	25.0
Booked/emergency	Booked	21	21.0
	Emergency	79	79.0
Socioeconomic status	Lower	65	65.0
	Middle	29	29.0
	Upper	06	6.0

Table 2: Most common presenting symptoms

Symptoms	In present study (n=100)
Yellowish discolouration of sclera &/or urine	91 (91)
Abdominal pain	80 (80)
Nausea/Vomiting	32(32)
Fever	25(25)
Itching	12(12)
Altered sensorium	09(09)

Yellow discolouration of sclera / urine followed by abdominal pain, and nausea / vomiting and fever were the

most common presenting symptoms in majority of the patients. But few patients also presented with pruritus (itching). Also 9 patients presented with very acute severe fulminant disease with altered sensorium (table 2).

Table 3: Liver function test on admission

Investigations		No. of patients (%)
Serum bilirubin	<5 mg/dl	26
	5-10 mg/dl	30
	10-15 mg/dl	12
	15-20 mg/dl	17
	>20 mg/dl	15
SGPT	<100 U/L	13
	100-1000 U/L	62
	>1000U/L	25
SGOT	<100U/L	23
	100-1000U/L	57
	>1000U/L	20
ALP	Raised	83
	Normal	17

SGPT - Serum glutamic pyruvic transaminase, SGOT - Serum glutamic-oxaloacetic transaminase, ALP – Alkaline phosphatase

Liver enzymes like ALP and SGPT were altered in majority of the patients and nearly half of the patients (44%) were having high serum bilirubin levels beyond 10 mg/dl (table 3).

Table 4: Etiological factors

Etiological factors	No. of patients	Percentage (%)
Infective hepatitis	58	58
Hepatitis A	20	20
Hepatitis B	03	03
Hepatitis C	00	00
Hepatitis E	35	35
Cholestatic jaundice of pregnancy	08	08
Haemolytic jaundice	05	05
Pre eclampsia, eclampsia, HELLP Syndrome	10	10
Others(gallbladder pathology and cirrhosis)	04	04
Idiopathic	15	15

Table 5: Maternal morbidity

Complications	No. of cases	Percentage
Disseminated intravascular coagulation	13	13%
Renal failure	07	7%
Septicaemia	03	3%
Hepatic encephalopathy	09	9%
Postpartum haemorrhage	10	10%
ICU admission	02	2%

Amongst the diverse etiological factors involved in pathogenesis of jaundice in pregnancy, infective hepatitis and out of it hepatitis A & E shared the most common part. Out of it most deadly etiological involvement was of hepatitis E. Preeclampsia, eclampsia and HELLP syndrome constituted about 10% of cases, though exclusively found in pregnancy they had significant participation in causing morbidities amongst patients. Infact the haemolytic picture of blood was also associated and took part in causing

jaundice in pregnancy. Despite of the study being conducted in a tertiary care centre which has all extensive facilities to provide all kind of investigations to be done as and when required and that too promptly, still 15% of the cases were found to be idiopathic (table 4).

Table 6: Maternal outcome

Outcomes	Number of patients (%)
Discharged	79 (79%)
Expired	21 (21%)

Table 7: Relation of maternal death and perinatal death to initial maternal serum bilirubin level

Bilirubin	Total no patients	Total no of maternal death	Total no of perinatal death
<5 mg/dl	26	0 (0.0%)	1(3.84%)
5-10 mg/dl	30	2 (6.66%)	2 (13.33%)
10-15 mg/dl	12	3(25.00%)	4 (33.33%)
15-20 mg/dl	17	7(41.17%)	7(58.82%)
>20 mg/dl	15	9(60.00%)	9(93.33%)

Most common complications seen amongst our study group were DIC, post partum haemorrhage and hepatic encephalopathy seen in 13%, 10% and 9% patients respectively (table 5). In present study maternal mortality was 21 (table 6).

Table 8: Neonatal outcome in terms of perinatal morbidity and mortality

Outcomes	No. of patients
Preterm labour	18
Intra-uterine growth restriction	11
Meconium stained liquor	23
Fetal distress	22
Antepartum fetal death	11
Intrapartum fetal death	05
Neonatal hyperbilirubinemia	28
Perinatal mortality	23

The participants of present study group demonstrated that jaundice in pregnancy not only dooms pregnant women's health but also casts black shadows on antepartum, intrapartum as well as postpartum fetal outcome. 18% of the patients presented with preterm labour and in 11% patients doppler study was suggestive of intrauterine growth retardation, resulting in poor baby prognosis and increased rate of NICU admissions. During intrapartum period 23% cases presented with meconium stained liquor, 22% babies developed intrapartum distress that even led to antepartum and intrapartum death that constituted about 11% and 5% of the patients respectively. 28% babies developed icterus i.e. neonatal hyperbilirubinemia requiring single surface phototherapy or double surface phototherapy and bilirubin level evaluation. Perinatal mortality was 23% in the present study (table 8).

Discussion

The incidence of jaundice in India is around 1 to 4 per thousand pregnancies. The incidence of jaundice in pregnancy in our study was 0.65%, which is higher as compared to the results as cited by Kamalajayaram and Rama Devi et al⁷ who stated it as 0.46 %, Rao KB and Rudra G et al⁹ as 0.2 % most probably due to our being a tertiary care apex institute of the state with inpouring of crowd from within the city, within the state as well as outside the state from the areas surrounding the vicinity. Amongst the most common symptoms found in pregnant women with jaundice were yellowish discolouration of sclera and urine accompanied with abdominal pain as well as nausea and vomiting. Altered sensorium was also noticed in around 9% of patients. In present study the most common symptom was yellowish discolouration of urine and/or sclera was present in majority (91%) of patients which was almost similar with studies by Patra et al (92.72%)⁴.

Infective hepatitis A, B, C, D or E type are the main causative agents which can be held for jaundice in pregnancy. Cholestatic jaundice is also common in pregnancy. Also there were 13% cases who belonged to idiopathic etiology. The cases which presented with the diseases in advanced stage along with altered liver enzymes and markers in association with established complications like eclampsia, HELLP syndrome, renal failure, hepatic encephalopathy, they required ICU admission and management by multidisciplinary approach of obstetrics and medicine department together. Many of the patients when brought to the hospital were already in morbid condition and often to the disappointment, did not respond to treatment.

Our maternal mortality was 21%. A similar high mortality was reported by various authors. Kamalajayaram and Rama Devi⁷ reported 33.3% maternal mortality, Singh et al⁶ reported 10%, and Trivedi et al⁸ 29.3%. Acute fulminant liver failure, renal failure (7%), hepatic encephalopathy (9%), DIC (13%) and postpartum haemorrhage (10%) were causes for the deaths. HEV infection is the most prevalent and dangerous type of viral hepatitis.

Maternal deaths were directly proportional to the level of serum bilirubin. In present study the mean serum bilirubin was 8.79 mg/ dl, while it was 11.96 mg/dl according to Patra et al (2007)⁴. Based on the figures we can say that jaundice in pregnancy has high maternal and foetal morbidity & mortality. 79 patients out of 100 hailed from rural areas with lower socioeconomic background, lack of education and health awareness, unregistered, unbooked patients with no

antenatal care, reported late to the hospital or were referred late from the peripheries.

There were 23 perinatal deaths (23%) and after comparing the results observed in our study with other similar studies, prematurity accounted for majority of the deaths. High perinatal mortality rate of 45.45% was observed by Singh et al⁶, perinatal deaths were mostly due to the prematurity.

Conclusion

Pregnancy with jaundice is a lethal condition with very high maternal and perinatal morbidity and mortality. Viral hepatitis A and E were most common cause of jaundice in our study. And we all are well versed with the fact that viral hepatitis specially A and E are preventable diseases by generating public awareness about the various routes of transmission, improving sanitary conditions and habits, imparting health education and knowledge of preventive measures. Regular antenatal care, early diagnosis at lower bilirubin level, early transfer to higher centre, required prompt and timely interventions and multidisciplinary approach could prevent mortality. Many of the patients when brought to the hospital are already in moribund condition and often, do not respond to treatment. Jaundice in pregnancy should be managed as a team with collaboration of obstetrics, internal medicine, anaesthesia and critical care so that early diagnosis and aggressive management can prevent and reduce fetomaternal morbidity and mortality.

Conflict of interest: None. **Disclaimer:** Nil.

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