To Prevent Jaundice in Pregnancy Today

ABSTRACT

Aim To find out, best measures for the prevention of jaundice in pregnancy.

Settings A large public tertiary referral Centre for Obstetric care in Chennai Metropolis.

Materials and Methods Case records of all antenatal mothers with jaundice in any trimester of pregnancy attending the hospital over a period of 1 year, were analysed to find out best measures for early detection and prevention of jaundice in pregnancy.

Results There were a total number of 17,890 antenatal admissions during the study period and 51 pregnant women with jaundice were admitted for treatment. The incidence of jaundice complicating pregnancy during this period in our hospital was 0.29%. Nearly, 74% of the jaundiced patients were between 20 and 29 years. About 92.1% of women belonged to class 4 and 5. The maximum percentage of (54.9%) jaundiced women were primigravida. Most women (80.39%) were presented with jaundice during the third trimester. Predominant symptoms were discoloration of skin present in all, and nausea and vomiting in 70.6% of women. At least 95% of women were ignorant about drinking water hygiene and use of safe water.

Viral hepatitis was the commonest etiology in 50.98% of women in the study. HELLP syndrome, a life-threatening pregnancy complication, was diagnosed as a cause of jaundice in 30.72%. Acute fatty liver of pregnancy was causative for 50% of deaths. HELLP syndrome was fatal in one unbooked pregnant woman. Preterm births were seen in 46% of women. Perinatal mortality was 33% and of these 30% was due to prematurity. AFLP and chronic liver disease with portal hypertension were the cause in 7.84%. Maternal mortality among pregnant women with jaundice was a significantly high 7.8%, and accounted for 12.5% of total maternal deaths (P < 0.0000001).

Conclusion Although liver diseases are seen infrequently in pregnancy, the complications associated with liver dysfunction can result in severe maternal and fetal compromise. Obstetricians must remain vigilant to detect early compromise in liver function to save mother and baby. Health workers should be trained in screening and early referral. Safe drinking water should be provided for all. Improved sanitary precautions should be taught during antenatal visits and hazards of promiscuity with relation to hepatitis B and other infections should be explained to the public.

Screening for hepatitis B should be done during the first visit, especially in high-risk areas for liver infections. Detection of infections such as hepatitis E, and leptospirosis in pregnant women is life saving for mother and baby if done early.

The call is for early booking of pregnant women to prevent maternal and perinatal morbidity and mortality. Appropriate management of preeclampsia by early diagnosis and referral for high-risk pregnancies.

KEYWORDS pregnancy, jaundice, hepatitis E, leptospirosis

INTRODUCTION

Pregnancy is a state when the human body undergoes several changes in the process of preparation to accommodate and nurture the growing fetus. The liver is the site of many important metabolic and synthetic functions of the body. Placental hormones that sustain the pregnancy are secreted in large amounts. These hormones are detoxified in the liver. This is observed as abnormal liver tests in at least 3–5% of pregnancies even in pregnant women in good health. Increase in alkaline phosphatase due to placental secretion, hypalbuminemia due to hemodilution are some of the changes peculiar to both pregnancy and decompensated liver function seen in liver disease.

Liver diseases in pregnancy are a rare occurrence but nevertheless cause serious adverse effects on both mother and fetus at times even cause mortality of the mother and often of the baby, especially in developing countries like India. All liver diseases complicating pregnancy are associated with considerably increased maternal and fetal morbidity and mortality. In India, jaundice in pregnancy causes an estimated 5–20% of maternal...
mortality and a considerable percentage of perinatal wastage. The diagnosis of liver disease in pregnancy is therefore challenging. Laboratory investigations are most important to diagnose early liver disease in pregnancy. Obstetric care with vigilance in recognizing early liver disorders in pregnancy and co-ordinated management along with the physician and liver specialist are essential for promoting good maternal and fetal outcomes.

MATERIALS AND METHODS

A prospective, observational study was conducted over a period of 1 year between 2011 and 2012. All antenatal mothers with jaundice in any trimester of pregnancy were included in the study. Women with associated comorbid conditions like renal problem, heart disease were excluded from the study.

Detailed history regarding age, socio economic status, obstetric history was obtained. The patients were enquired in detail about complaints and like nausea, vomiting, pruritis, anorexia, yellow coloured urine, pale stools, edema legs, bleeding tendency, joint pain and the duration of the complaints.

Past history of jaundice especially in previous pregnancy, history of blood transfusion, history of STI and history of jaundice in family members were noted. The knowledge and attitude of the women regarding the source of drinking water and the practice of drinking safe or unsafe water were noted.

Thorough general examination was done in all patients. Important signs of anaemia, jaundice, edema, bleeding gums, hepatic tremor were looked for. Temperature, pulse rate, and blood pressure were recorded. Abdominal examination was performed to find out if any liver and spleen enlargement and free fluid, were present. Liver function tests, such as total serum bilirubin, direct and indirect, total proteins, albumin and globulin, SGOT, SGPT, serum alkalinephosphatise, clotting time, bleeding time and USG were done. Complete hemogram and reticulocyte counts were done. Coagulation profile was done for all women, and the values were noted. Viral markers study including HBsAg, anti HAV IgM, anti HCV Ab, anti HEV IgM by ELISA technique was done. VDRL and HIV examinations were done in all patients. Medical gastroenterologist opinion was obtained in nearly all cases. The dark field microscope examination was done for leptospirosis. Blood samples were also sent for MSAT. Antibiotics were started as soon as dark field microscope results were obtained.

At delivery, all babies were assessed by paediatrician. Babies were followed up till discharge.

RESULTS AND DISCUSSION

There were a total number of 17,890 antenatal admissions during the study period. A total number of 51 pregnant women with jaundice admitted for treatment formed the study group. The incidence of jaundice complicating pregnancy during this period in our hospital was 0.29%. The incidence of jaundice complicating pregnancy during this period for India ranged from 0.1 to 0.4%. The patients in the study group were in the age range between 18 and 36 years. Nearly, 74% of the jaundiced patients were between 20 and 29 years. The peak incidence was seen in peak age for child bearing (Fig 1) and, therefore, age prediction was not specific. About 92.1% of the women belonged to class 4 and 5. Only 5% of patients were utilizing safe water for drinking purpose and 95% patients were ignorant about safe water (Fig 2). Three women had a history of contact with patients with jaundice. Two women had a history of blood transfusion among which one was HBsAg positive. Only 10 women had been immunised against hepatitis B. Poverty and lack of education were major co factors. Educating women regarding the cause of the disease through community-based programs would be helpful to prevent the disease. Jaundice was present in all the women (Fig 3). Primigravida women formed 54.9% and gravida formed 35.29%.

Hepatomegaly was seen in nearly 18% of women (Fig 5). Out of 51 women, 80.39% of the study group (n = 41) presented with jaundice during the third trimester (Fig 6). Duration of complaints was for 1–5 days in 45.1% of patients. Nausea and vomiting were
Other predominant symptoms were fever, loss of appetite and upper abdominal pain. Of symptoms reported, 86.27% of women had complained of high-coloured urine. 92.15% of patients showed positive results for bile pigments and bile salts in the urine. 19.6% were positive for protein. Serum bilirubin levels ranged between 2.8 and 184 mg/dl. In 7.84% of patients, it was above 16 mg/dl.

Serum transaminase levels were below 100 iu/l in 13.72% of patients. In 5.88% women, the level was more than 500 iu/l. Serum alkaline phosphatase levels were more than 400 U/L in 21.5% of women.

Majority of 45% of women with jaundice were term and 29% were of GA of 32 to below 37 weeks.

All symptomatic pregnant women should be admitted for observation and screened.

**Etiology of jaundice in women**

Viral hepatitis was the commonest etiology in 50.98% of the women. Of this number, hepatitis E was detected in 14 women and hepatitis B in 10 women. HELLP syndrome was the next most common cause in nearly 12% of women. AFLP and chronic liver disease with portal hypertension were the causes in 7.84% of the study group.

Hemolytic jaundice due to hereditary spherocytosis was seen in one patient. The cause was undetected in 2 women (Table 1).

Liver infection was the most common cause of jaundice.

**Pregnancy outcome**

Out of 51 women, four women admitted in the second trimester and first trimester could not be followed up.
after discharge. One woman died antenatally. One had spontaneous abortion. A total of 45 women delivered in our centre. Out of 43 women who delivered 21 women delivered at term, 22 women delivered preterm. High levels of serum bilirubin and serum transaminase levels were noticed in viral hepatitis. The incidence of maternal mortality rate in our population. Jaundice complicating pregnancy was a significant causative factor for a large percentage of 12.5% of total maternal deaths ($P < 0.0000001$).

**Causes of maternal mortality**

There were four maternal deaths among the group. Two women died due to acute fatty liver of pregnancy (AFLP). Each woman died of HELLP and due to rupture of esophageal varices. There was no relation of raised serum transaminase levels to maternal mortality. The incidence of maternal mortality rate in our referral centre for the study period was 1.78/1000 population. Jaundice complicating pregnancy was a significant causative factor for a large percentage of 12.5% of total maternal deaths.

**Foetal outcome**

Poor fetal outcome was seen in five women with HELLP syndrome. AFLP was the cause for mortality in two mothers and their babies. Preterm delivery was high in our study with 46% of births and term delivery was with 51%. Early booking, subsequent diagnosis, admission and treatment would have prevented this problem. Perinatal mortality was 33%. Of these, 30% was due to prematurity. There were 46 babies born and of these 25 were preterm, 21 were term, 4 preterm babies born alive and died during neonatal period. High mortality rate, that is 80%, was among babies with birthweight below 2.5 kg (Fig. 7). The preterm IUD was 22.2% and term IUD was 4.44%.

**CONCLUSION**

Viral hepatitis was the commonest etiology in 50.98% of women. Jaundice complicating pregnancy was a significant causative factor for a large percentage (12.5%) of total maternal deaths. Acute fatty liver of pregnancy was causative for 50% of deaths, HELLP syndrome in 25% and internal bleeding caused by the rupture of esophageal varices in 25% of maternal deaths. Preterm births were high in 46% of jaundiced women and high perinatal deaths of were seen in 80% of preterm babies with birth weight below 2.5 kg. The call is for early booking of pregnant women and referral of high-risk pregnancies to prevent maternal and perinatal morbidity and mortality. Appropriate management of preeclampsia and high-risk pregnancies by early diagnosis in well-equipped tertiary care centres would only then be possible.

Although liver diseases are seen is infrequently in pregnancy, the complications associated with liver dysfunction can result in severe maternal and fetal compromise. Obstetricians must remain vigilant, to detect early, compromise in liver function to save mother and baby. Screening for hepatitis B should be done in the first visit, especially in high-risk areas for liver infections. Early detection of infections such as hepatitis E, and Leptospirosis in pregnant women is life-saving for mother and baby. Health workers have to be trained in screening and early referral. Safe drinking water should be provided for all. Improved sanitary precautions should be taught during antenatal visits and hazards of promiscuity with relation to hepatitis B and other infections should be explained to the public.

Although liver diseases are seen in pregnancy, the complications associated with liver dysfunction can result in severe maternal and fetal compromise. Chronic liver diseases that can be identified by screening and by laboratory tests, should be mandatorily carried out in the antenatal period to prevent maternal and fetal morbidity and mortality. Failure to screen for hepatitis B could result in a newborn that would be a hepatitis carrier for life. All pregnant patients should be screened for hepatitis B. Babies of HBsAg positive mothers should be immunised against hepatitis B. Awareness about jaundice and its complications should reach every obstetrician, as the call is for diligent care by, obstetrician who also must remain vigilant, to detect early compromise in liver function to save mother and baby. All antenatal women should be booked early. Screening for hepatitis B should be done during the first visit, especially in high-risk areas for liver infections. Early detection of infections such as hepatitis E and leptospirosis in pregnant women, is life saving for both mother and baby. Early detection and early of coagulation failure reduces mortality.

Public health measures of proper sanitation facilities and sewage disposal should be made available to all, and health education to be made compulsory for all. All health workers have to be trained in screening and early referral. Delivery of women with jaundice complicating pregnancy at tertiary health care centres where well-equipped labour room and good new born intensive care facilities are available is essential.
Health workers should be trained in screening and early referral. Safe drinking water should be provided for all. Improved sanitary precautions should be taught during antenatal visits and hazards of promiscuity with relation to hepatitis B and other infections should be explained to the public.

REFERENCES