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Original Research Article

Aetiology of jaundice in pregnancy: observational study in a tertiary care hospital

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ABSTRACT

Background: Jaundice in pregnancy has potentially serious consequences to both mother and foetus. This study aims to find out the aetiology of jaundice and its severity in pregnancy.
Methods: This is an observational prospective study over a period of one and a half years conducted in the Department of Obstetrics and Gynaecology, Government Medical College, Kozhikode. Antenatal patients who presented with jaundice was included in this study.
Results: Out of 24060 deliveries in the study period of one and a half years there were 52 cases of jaundice complicating pregnancy. Incidence of jaundice complicating pregnancy was found to be 0.22%. Largest number of women belonged to the age group 21-25 years of age. Most of the cases occurred in the third trimester. 55.8% of the cases were multigravidas Most common cause of jaundice in pregnancy was found to be HELLP syndrome (34.6%) followed by Hepatitis A (32.7%) 67.3% of the cases had only mild elevation of bilirubin levels (2-5.9mg/dl). 65.4% had an SGOT value of less than 200U/litre and 67.3 % had an SGPT value of less than 200U/litre.
Conclusions: The decrease in the number of cases of viral hepatitis may be due to the increased awareness about the transmission of disease and improvement in sanitary conditions.

Keywords: HELLP syndrome, Hepatitis A, Jaundice

INTRODUCTION

The word 'Jaundice' is derived from the French word 'Jaunes' meaning yellow.[1] Jaundice is defined as yellowish discolouration of skin, sclera and mucous membranes. Jaundice becomes clinically detectable when the serum bilirubin level exceeds 2mg/dl. Liver disease is a rare but potentially serious complication seen in pregnancy occurring more in developing countries than in developed countries. They are the most frequent cause of liver dysfunction in pregnancy. When severe, they are associated with significant morbidity and mortality for both mother and infant. The incidence of liver disease varies globally. In a ten year study conducted at University College Hospital, Ibadan on 'Maternal and foetal outcomes of jaundice in pregnancy' by Oladokun et al, the overall incidence of jaundice in pregnancy was 0.3%.[2] In another study of jaundice in pregnancy conducted by Acharya N et al, Datta Maghe Institute of Medical Sciences, Wardha, the overall incidence of 0.4% was noticed.[3] A study conducted at the Department of Obstetrics and Gynaecology at Mamata Medical College, Khammam, Andhra Pradesh the perinatal mortality was found to be 33.3% and maternal mortality was 16.6%.[4]

In a study of 'Feto-maternal outcome in jaundice during pregnancy' by Nagaria et al in the Department of Obstetrics and Gynaecology at Pandit Jawaharlal Nehru Medical college, Raipur, maternal mortality recorded was as high as 30.3%.[5]

Causes for liver disorders in pregnancy include causes specific to pregnancy like Haemolysis, Elevated liver enzymes and Low platelet count (HELLP) syndrome, acute fatty liver of pregnancy (AFLP), intrahepatic cholestasis of pregnancy (ICP), hyperemesis gravidarum and other diseases which occur incidentally in pregnancy like viral hepatitis. Most of the studies show viral hepatitis to be the most common cause of liver disease in pregnancy.[2,3,5] Pregnancy specific liver disorders are seen in particular trimesters whereas disorders incidental in pregnancy can occur anytime during pregnancy. Liver disorders occurring in pregnancy can pose a real challenge to the treating obstetricians. The advances in understanding of the diseases with timely diagnosis and management have resulted in a significant reduction in the adverse outcome occurring both in the mother and the foetus.

METHODS

This is an observational prospective study conducted in the Department of Obstetrics and Gynaecology, Government Medical College, Kozhikode from March 2016 to September 2017-a total of 18 months.

Inclusion criteria

- Antenatal patients who presented with jaundice and attended the Department of Obstetrics and Gynaecology during the study period was included in the study.
- Women belonging to any getational age were included.

Exclusion criteria

- Non pregnant ladies with jaundice were excluded from the study.

A detailed history, clinical examination and necessary investigations were done for all cases. The cases were followed up till delivery. The data was analysed to find out the percentage distribution of the cases according to age, parity, gestational age, cause of jaundice and its severity.

RESULTS

The observations from this study were as follows. The total number of deliveries in this period was 24060. The number of cases with jaundice complicating pregnancy was 52. Thus, the incidence of jaundice complicating pregnancy was 0.22%.

Maternal age and incidence

Table 1 shows that the largest number (19 cases) of patients belonged to the age group 21-25 years of age. The maximum number of deliveries occurred in this age group in our hospital.

Table 1: Relationship between maternal age with jaundice in pregnancy.

Age group	Number of cases	Percentage
<20	12	23.1
21-25	19	36.5
26-30	13	25
31-35	7	13.5
>35	1	1.9

Gravidity

Figure 1 shows that 55.8% of women included in this study were multigravidas.

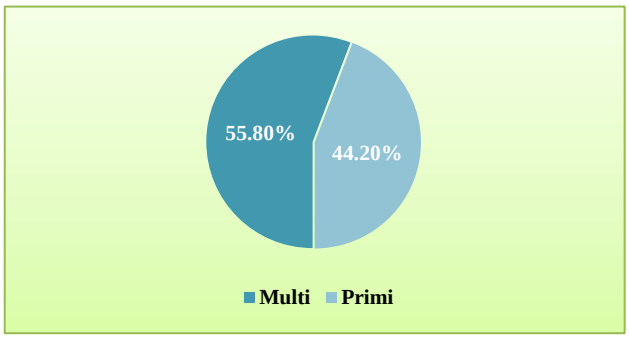

Figure 1: Relationship between gravidity and incidence of jaundice.

Gestational age and liver disease

Figure 2 shows that the maximum number of cases were between 34-37 weeks of gestation. Only 1.92% of the cases had a gestational age of less than 28weeks.

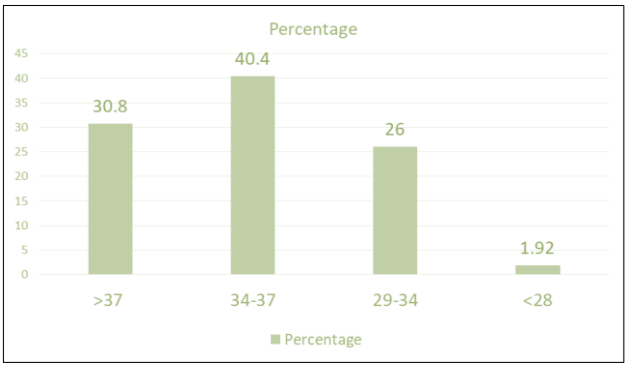

Figure 2: Relationship between gestational age and jaundice complicating pregnancy.

Aetiology of jaundice

In this study as shown in Figure 3 out of the fifty two cases of jaundice complicating pregnancy, eighteen (34.6%) were found to be due to HELLP syndrome. This accounted to the maximum number of jaundice complicating pregnancy.

Viral hepatitis was found in seventeen (32.7%) of them which was the second most common cause and all of them were hepatitis A. AFLP was seen in seven cases (13.5%).

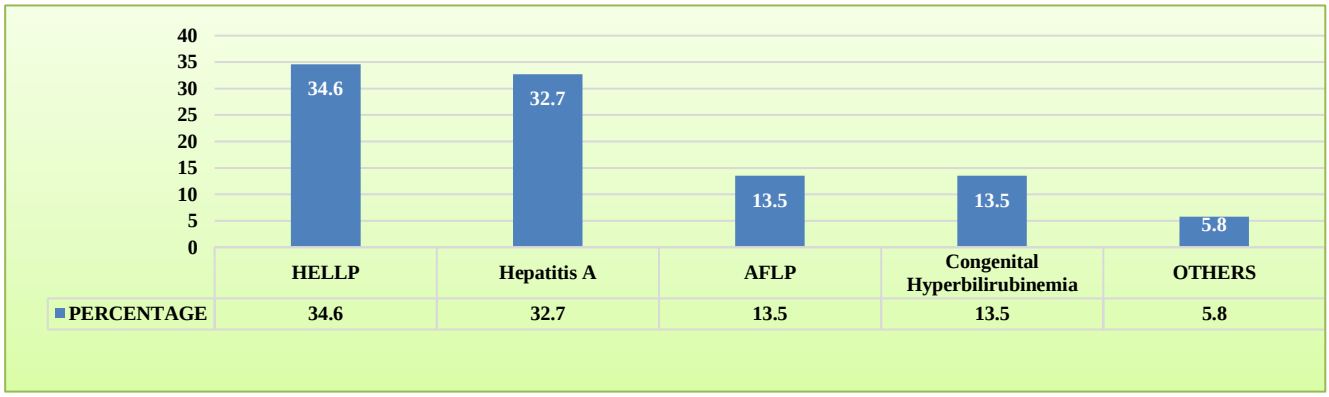

Figure 3: Aetiology of jaundice.

Liver function tests

Range of total bilirubin

Table 2 shows that most women had a total bilirubin value of less than 6mg/dl. Only one woman with AFLP had a bilirubin value of more than 20mg/dl.

Table 2: Distribution of total bilirubin (mg/dl).

Total bilirubin (mg/dl)	Number of cases	Percentage
2-5.9	35	67.3
6-9.9	10	19.2
10-19.9	6	11.5
>20	1	1.9

Range of liver enzymes

Figure 4 shows the range of liver enzymes. 65.4% had an SGOT value of less than 200U/litre and 67.3% had an SGPT value of less than 200U/litre.

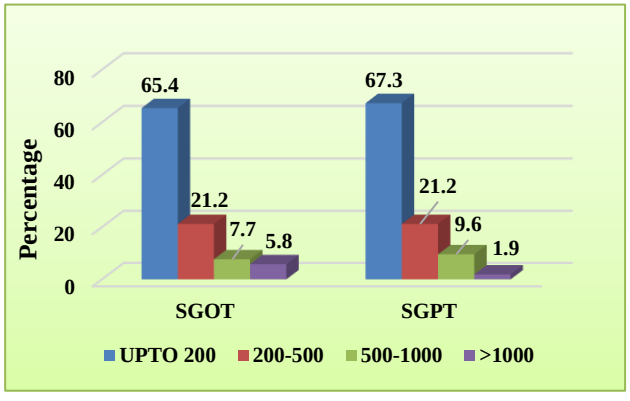

Figure 4: SGOT/SGPT levels (Units/litre).

Only 5.8% of women had an SGOT value >1000U/l and only 1.9% had an SGPT value of more than 1000U/l.

DISCUSSION

This study 'Jaundice in pregnancy' was conducted in The Department of Obstetrics and Gynaecology, Government Medical College, Kozhikode over a period of one and half years from March 2016 to September 2017. Women who presented with jaundice were included in this study. The total number of cases over this time period was 52 out of 24060 deliveries.

Incidence of jaundice varies in developing and developed countries, the incidence being more in developing countries. In this study the incidence of jaundice complicating pregnancy was found to be 0.22%. This observation tallies with various other studies done in other parts of the country. In 1992 Sarkar et al, reported an incidence of 0.23%.[6] In 2016 a study conducted by Krishnamoorthi J et al, the incidence of jaundice in pregnancy was 0.29%.[7] In another study conducted by Neema et al at, Wardha over a period of 6 years, published in 2013 reported a slightly higher incidence of 0.4%.[3] In a study conducted in 2016 at Seth G S Medical College, the incidence reported was 0.81%.[9] This shows that the incidence of liver diseases not only varies globally but varies from region to region within the same country.

The first parameter analysed was the relationship between age and incidence of jaundice in pregnancy. The largest number of patients belonged to the age group of 21-25 years (36.5%). The maximum number of deliveries occurred in this age group in our hospital. One quarter of the women belonged to the age group of 26-30 years and 23.1% women belonged to less than 20 years of age. In

the age group of 31-35 there were 13.5% of women and 1.9 % belonged to more than 35years of age. In a study of one year conducted by Deep A et al, the maximum number of cases belonged to the age group of 21-25 years.[8] In another study conducted by Meena et al, at Seth G S Medical College found a similar distribution with 59 % of women belonging to less than 25 years of age.[9] In a clinical study at Fathima Memorial System, Pakistan in 2015 reported a clustering of 71.02% of women with liver disease in the age group 20-30 years.[10] This finding may be due to the fact that those women in this age group are the most reproductively active females. Twenty nine out of fifty two cases were multigravidas accounting to 55.8% of the cases. This was against the study conducted by Meena et al, at Seth G S Medical College where the incidence of liver diseases in pregnancy was more in primigravidas.[9]

Analysing the gestational age in weeks the peak occurrence of jaundice 40.4 % was found in 34-37 weeks of gestation. Around forty percent of the cases were found in more than 37 weeks of gestation, 26.9 % in women between 29-34 weeks of gestation. 1.92% occurred in less than 28 weeks of gestation. Fifty one out of the fifty two cases occurred in the third trimester. HELLP syndrome and AFLP are most commonly seen in the third trimester. Similar results have been published by most authors. Krishnamoorthy J et al, in their study conducted in Government Medical College, Tiruvannamalai found that the maximum incidence of jaundice was in the third trimester. In a study conducted at Seth G S Medical College and K. E. M. hospital, Mumbai found that maximum patients (43.6 %) belonged to 32-37 weeks of gestation.

Coming to the pattern of disease distribution, HELLP syndrome was the commonest cause of jaundice in this institution. The next most common cause was Hepatitis A. Of the 52 cases 18 (34.6%) were due to HELLP syndrome and 17 (32.7%) were due to viral hepatitis. All cases of viral hepatitis were caused by hepatitis A virus. However, one patient with hepatitis A infection had a coexistent hepatitis E weak positivity and one patient had an associated sickle cell disease. Thirteen percentage of the cases were due to AFLP and an equal number of cases were congenital hyperbilirubinemia. There were one case each of cholangitis, cholelithiasis and cholangiocarcinoma. Earlier studies show viral hepatitis to be the most common cause of jaundice in pregnancy (Meena et al, Neema et al,). Krishnamoorthi J et al, reported an incidence of 51% of cases of hepatitis in their study and 13.72% of cases of HELLP syndrome Shukla et al, who reported 57% and Harshad et al, reported 47% cases of viral hepatitis in their study.[11,12] Studies by Friedman et al, Waterstone, Bewly 2001 shows a decreasing trend in incidence of hepatitis.[13] This may also be due to the increased public awareness about personal and community hygiene. There were many HBsAg positive cases in this study period but all of them were in the chronic carrier state and none in the acute hepatitis stage, hence these cases were not included in the study.

The total bilirubin level showed only a mild elevation (2-5.9mg/dl) in 67.3% of cases. The bilirubin level was 6-9.9mg/dl in 19.2%. A higher level of 10-19.9mg/dl was found in only 11.5% and a value of more than 20mg/dl was found in only one (1.92%) case which was a case of AFLP. In the study by Jayanthi et al, the level of bilirubin varied widely between 2.8 to 18.4mg/ dl and 7.84% of patients had high serum bilirubin more than 16mg/dl.

CONCLUSION

The incidence of jaundice complicating pregnancy in this study was 0.22%. Commonest age group in which liver diseases were found was 21- 25 years. Most of the cases occurred in the third trimester. The most common cause of liver diseases in this study was HELLP syndrome followed by hepatitis A. The decrease in number of cases of viral hepatitis may be due to the increased awareness about the transmission of disease and the improvement in sanitary conditions.

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