



## THE PREVALENCE OF JAUNDICE DURING PREGNANCY AND ITS IMPACT ON NEWBORN

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Article Received on 20/06/2024

Article Revised on 10/07/2024

Article Accepted on 30/07/2024

### ABSTRACT

**Objectives:** Incidence of jaundice in pregnancy, including underlying chronic liver diseases, is considerable. Several factors are responsible for the jaundice status in pregnancy. In the present study an attempt has been made to investigate the prevalence of jaundice during pregnancy and its impact on newborn. **Methodology:** The study was conducted on purposively selected 43 pregnant women of abnormal liver functions in the Department of Gynecology and hospital laboratory in the department of Biochemistry of Dr. Singh Path Lab and General Hospital, Sarkaghat, Himachal Pradesh, a Secondary Care Hospital, from January to June 2024. The age range of the participants were recorded as 20-40 years. The participants were divided into two groups, i.e. age group 20-30 years and age group 31-40 years. Informed consent was also taken from all participants. Demographic data, i.e. age, residence, socio-economic status were gathered using structured questionnaire. Serum bilirubin was estimated by standard method. **Results:** The maximum number of participants (67.44%) was reported in age group 20-30 years. The maximum number of participants (79.07%) was reported from urban areas and the maximum number of participants (41.86%) was from upper-lower class category in their socio-economic background. The chi-square value (3.85) showed significant association ( $p < 0.05$ ) the bilirubin status and pregnancy. **Conclusion:** It could be concluded from the findings of the present study that demographic factors, such as age, residence and socio-economic factors play a considerable role in the jaundice status in pregnancy also a strong association has been established between the jaundice status and pregnancy.

**KEYWORDS:** Jaundice status. Pregnancy. Demographic factors. Bilirubin.

### INTRODUCTION

Though, Jaundice affects a small percentage of pregnant women, yet it takes a major toll on health of both mother and foetus, especially in developing countries. Jaundice in pregnancy carries a grave prognosis for both the fetus and the mother, and is responsible for 10% of maternal deaths (Tripti and Agarwal, 2005). It could be peculiar to the pregnancy such as acute fatty liver of pregnancy, recurrent cholestatic jaundice in pregnancy and jaundice complicating toxemia of pregnancy. It can be concurrent with pregnancy such as due to infective pathology like viral hepatitis or due to gallstones or it could be due to drugs administered during pregnancy. The normal serum bilirubin concentration in adults is less than 1 mg/dL;

however, clinical jaundice is not manifested until the serum bilirubin is greater than 2 mg/dL. Liver function tests remain largely unchanged during pregnancy except the increased levels of alkaline phosphatase (ALP). ALP is physiologically produced by placenta at the brush border membranes of the syncytiotrophoblast (Celik et al., 2009). Incidence of jaundice in pregnancy including the underlying chronic liver diseases is 3–5% (Hay, 2008).

Some factors affecting pregnancy causing jaundice are already established. Though, demographic factors are very important, still sometimes less studied. In the present study, an attempt has been made to investigate

the prevalence of jaundice during pregnancy and its impact on newborn, considering some demographic data.

## MATERIALS AND METHODS

### Materials

The study was conducted on purposively selected 43 pregnant women of abnormal liver functions in the Department of Gynecology and hospital laboratory in the department of Biochemistry of Dr. Singh Path Lab and General Hospital, Sarkaghat, Himachal Pradesh, a Secondary Care Hospital, from January to June 2024. The age range of the participants were recorded as 20-40 years which was confirmed from their birth certificates. The participants were divided into two groups, i.e. age group 20-30 years and age group 31-40 years. Informed consent was also taken from all participants.

### Methods

Demographic data, i.e. age, residence, socio-economic status were gathered using structured questionnaire.

**Serum Testing:** A small amount of your blood was taken to perform this test. The blood sample was obtained through venipuncture: A needle was inserted into a vein through the skin in the arm or hand, and a small amount of blood was collected in a test tube. When a patient presents with jaundice, aspartate transaminase (AST), alanine transaminase (ALT),  $\gamma$ -glutamyl transpeptidase, alkaline phosphatase, and total and direct fractions of bilirubin should be measured as part of the first line serum diagnostic protocol. Hemolysis is characterized by fragmented red blood cells (schistocytes) and enlarged reticulocytes on the smear. A

CBC is helpful in identifying this condition. Markers of hepatocellular damage include ALT and AST. Since there may not be much liver parenchyma left to damage, levels may be normal or very slightly higher in individuals with chronic liver disease, making them less useful. The ALT level may increase by several thousand units per liter in cases of acute viral hepatitis.

### Statistical Analysis

Data was analyzed using SPSS (Statistical Package for Social Science) version 20.0. Percentage was calculated and the chi-square test was also applied. A 5% level of probability was used to indicate statistical significance.

## RESULTS

Table 1 showed the age-wise distribution of participants. The maximum number of participants (67.44%) was reported in age group 20-30 years, whereas the minimum number of participants (32.56%) was in age group 30-40 years.

The residence-wise distribution of participants was shown in Table 2. The maximum number of participants (79.07%) was reported from urban, whereas the minimum number of participants (20.93%) was from rural area.

Table 3 showed the socio-economic status-wise distribution of participants. The maximum number of participants (41.86%) were from upper-lower class, followed by the lower- middle class (34.88%) and the least (23.25%) were from lower class.

**Table 1: Age-wise distribution of the participants.**

Age group	Absolute No.	Percentage
20-30 years	29	67.44
30-40 years	14	32.56

**Table 2: Residence-wise distribution of the participants.**

Residence	Absolute No.	Percentage
Urban	34	79.07
Rural	09	20.93

**Table 3: Socio-economic status-wise distribution of the participants.**

Socio-economic status	Absolute No.	Percentage
Lower class	10	23.25
Lower middle class	15	34.88
Upper lower class	18	41.86

The distribution of jaundice status in pregnant women was shown in Table 4. In the age group 20-30 years, the maximum number of pregnant women (65.52%) with abnormal bilirubin level was reported as compared to the pregnant women with normal Bilirubin level (34.48%). Whereas in age group 30-40 years, the maximum number

of pregnant women (64.29%) with abnormal bilirubin was reported as compared to the pregnant women with normal bilirubin level (35.71%). However the chi-square value (3.85) showed significant association ( $p < 0.05$ ) between them.

**Table 4: Distribution of jaundice status in pregnant women.**

Jaundice status	Age Group 20-30 years		Age Group 31-40 years	
	Abs. No.	%age	Abs. No.	%age
Normal (0.2 -1.2 mg/dL)	10	34.48	05	35.71
Abnormal (>1.2 mg/dL)	19	65.52	09	64.29

$X^2$  (df. 1)= 3.85;  $p < 0.05$

## DISCUSSION

Liver dysfunction in pregnancy is associated with various pathologies including viral hepatitis, leptospirosis, malaria, increased haemolysis and pregnancy-related conditions like pre-eclampsia, HELLP, acute fatty liver, cholestasis of pregnancy and hyperemesis gravidarum. Though the incidence of pre-eclampsia in pregnancy remains uniform worldwide (2–8%) (Jeyabalan, 2009). The findings of the present study highlighted that the maximum participants were with the age group of 20-30 years (67.44%). The findings fell with the line of Changede et al (2019) where they also stated that most of the cases of jaundice were found in age group of 20–30 years (58%). Similar findings were reported by Aparajita (2015), and Krishnamoorthy and Murugesan (2016). The findings of the study also showed that the pregnant women participated in the study were predominantly from upper lower class (41.86%) category of the socio-economic status which was supported by the findings of Changede et al. (2019), Aparajita (2015) and Krishnamoorthy and Murugesan (2016).

A strong association between the status of jaundice and the pregnancy was reported in the present study. Jaundice in pregnancy carries a high risk of maternal and perinatal mortality.

Cholestasis of pregnancy is a liver problem. It slows or stops the normal flow of bile from the gallbladder. The association of jaundice with pregnancy was also reported by Devarbhavi et al. (2008) and Devi et al. (2014). Small sample size is one of the limitations of the study which would be overcome in the future study.

## CONCLUSION

It could be concluded from the findings of the present study that demographic factors, such as age, residence and socio-economic factors play a considerable role in the jaundice status in pregnancy. A strong association has been established between the jaundice status and pregnancy.

All these factors should be taken care both in mother health fetus care.

## Declaration by Authors

The authors hereby declared that it was their original piece of research and had not been sent to any other journal for publication.

**Ethical Approval:** Approved.

**ACKNOWLEDGEMENT:** The authors were thankful to the hospital authorities for their cooperation in the study.

**Funding agencies:** None.

**Conflict of Interest:** The authors declared no conflict of interest.

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