

Aetiology of Jaundice in Pregnancy

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ABSTRACT

Aim: To investigate the etiology of jaundice in pregnancy.

Study design: Cross-sectional, observational study.

Place and duration of study: Department of Obstetrics & Gynaecology, Sheikh Zayed Women Hospital Larkana from 1st January 2017 to 31st January 2018.

Methodology: Forty patients were recruited. After taken consent form, a proper clinical history, demographic, physical examinations, complications and neonatal outcomes were collected through questionnaire. Etiological investigation of jaundice had been through viral biomarker by enzyme linked immunosorbent assay. Liver enzymes like serum bilirubin, SGT, SGPT, alkaline phosphatase was done by laboratory examination.

Results: 53% having age group of 20-30 years (27.6±0.7) belonging to poor socioeconomic status. The statistical outcome indicates that hepatitis E virus is the major etiology of jaundice in pregnant woman 67%. The mean level of serum bilirubin was 9.71±2.8. It was observed that anemia, edema, vomiting, irritation and weakness were more common sign and symptoms in pregnant women.

Conclusion: Acute hepatitis E virus infection was the main causative factor.

Keywords: Jaundice, Etiology, Acute hepatitis infection, Hepatitis E virus

INTRODUCTION

Jaundice in pregnancy, is not an uncommon condition, affecting about 1/1500 pregnancies, it can be due to direct liver disease or specific conditions related with pregnancy, but the most common cause of jaundice in pregnancy is viral hepatitis especially acute infection with incident of 1-2/1000 other indirect cause, acute fatty liver of pregnancy, pre-eclampsia, eclampsia, HELLP syndrome, obstetric cholestasis.^{1,2} Acute hepatitis E infection is commonest causative agent of jaundice in pregnancy, HEV viral transmitted through or fecal rout.³ It is RNA virus with 4 genomes.⁴ Pakistan first epidemic of hepatitis E was reported in Islamabad, then Lahore and Karachi.⁵

During pregnancy this virus is highly virulent due to decrease immunity of pregnancy, but the actual pathophysiology is un-clear.⁶ Other causes of acute viral hepatitis are HAV, viral hepatitis B, C (HBV, HCV) these above mentioned causes may lead to chronic liver disease. Alcohol, consumption, in pregnancy may leads to liver failure and jaundice, in pregnancy there are some condition where liver enzymes and bilirubin may found raised e.g. acute fatty liver of pregnancy. It is very rare condition one in 16000 to 20000 of pregnancies it may happened in second trimester, obstetric cholestasis is also a pregnancy related liver dysfunction mostly start 2nd trimester with the incident of 0.1 to 1.5% this condition have rare impact of maternal morbidity but fatal fetal outcome⁷.

Toxemia of pregnancy including preeclampsia, eclampsia and HELLP syndrome, is also particular to pregnancy which may altered liver function test.⁸ The rational and aim of this study is to identify etiology of jaundice in pregnancy by investigation in sheikh Larkana.

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MATERIAL AND METHODS

This cross sectional, observational study was conducted at sheikh Zayed women hospitals Larkana from 1st January 2017 to 31st January 2018. A total of 30 pregnant women with acute onset jaundice were recruited in this study. After taken consent form, age, parity, gestational age, socioeconomic, clinical features, pregnancy outcome (mode of delivery, undelivered, improved, expired, miscarriage, complication like PPH, renal failure, encephalopathy, DIC) were collected through questionnaire. Investigation to be carried by liver function test such as bilirubin, serum transaminases, alkaline phosphates and viral marker Hepatitis A, B, C, E (immunoglobulin IgM, Ig G), platelet, LDH. For diagnosis of all condition interpreted on the basis of above mentioned lab test to identify the cause and relevant history. The data was entered and analyzed through SPSS-20.

RESULTS

53.3% were between 20-30 years age group whereas 33.33 were in 30-40 years age group. The mean age and gestational age were 27.6±0.7 years and 31.5±7.7 months respectively. A large proportion of studied women was a poor socioeconomic group that is 66.6%. Results found that all pregnant women presented the sign of jaundice, 11% was edema and only 6% was anemia. Majority of pregnant women were in 3rd trimester. The result shows that only 14 pregnant females undergo SVD, 4 was AVD. Out of 30, 3 was left against medical advice and 6 was expired undelivered (Table 1). The result shows that 22% of participants having irritation and vomiting. 16% having labor pain and 14 % experienced anorexia (Fig. 1).

Maternal morbidity was highly associated with serum bilirubin levels. The mean level of bilirubin was 9.17±2.8. The mean level of other blood parameter was mentioned in

Table 2. Twenty pregnant participants had hepatitis E virus which having Ig M and Ig G antibody against Hepatitis E virus. Table shows that HEV was a major cause of jaundice in pregnant participants (Table 3).

Table 1: Demographic information of the women

Variable	No.	%
Age (years)	27.6±0.7	
Gravida	5.1±2.1	
Para	4.3±0.7	
Abortus	0.52±1.4	
Gestational age (weeks)	31.5±7.7	
Blood pressure (mmHg)	105.2±74.7	
Socioeconomic status		
Poor	20	66.6
Middle class	10	33.3
Trimester		
2 nd trimester	3	10.0
3 rd trimester	27	90.0
Mode of delivery		
SVD	14	47.0
AVD (forceps & vacuum delivery)	4	13.0
LSCS	3	10.0
Undelivered		
Left against medical advice	3	10.0
Expired undelivered	6	20.0

Fig. 1: Major symptoms associated with pregnant participants

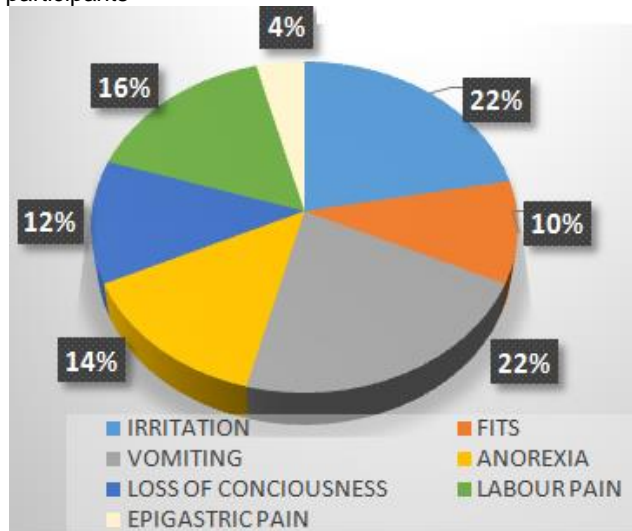


Table 2: Status of blood parameters in studied participants

Parameter	Mean±SD
Bilirubin	9.17±2.8
Direct	7.11±1.6
Indirect	1.81±1.1
SGOT	1005.6±42.4
SGPT	459.52±45.2

Table 3: Aetiology of jaundice in pregnant women (n=30)

Causes of jaundice	No.	%
Hepatitis A virus	3	10.0
Hepatitis B virus	2	6.6
Hepatitis C virus	2	6.6
Hepatitis E virus	20	67.0
LDL	3	10.0

DISCUSSION

In Pakistan, all type of hepatitis is endemic disturbing the adult population. Hepatitis in pregnancy presents provoking inquiries to the obstetrician. Most Asian nations have a high birth rate and a vast pool of hepatotoxic infections causing hepatitis in pregnancy. Globally, each year around 20 million people are effective through this infections resulting to death. In pregnancy, jaundice is a rare condition which directly effect on liver cell and to produce inflammation. Viral infection is a major etiology of jaundice in pregnancy.⁹

Present study found that viral hepatitis is the major etiology of jaundice in pregnant participants as compared to cholesterol level in blood like LDL (Table 3). Many research declared the fact that viral hepatitis play a crucial role in pregnancy to develop jaundice. HELLP syndrome, acute fatty liver, intrahepatic cholesterol level also have contributing effect on jaundice in pregnancy.¹⁰ Acharya et al¹¹ showed that outbreak of etiology had constantly been found along environmental conditions.¹¹

In the present study, hepatitis E virus has profound cause of jaundice as compared to hepatitis A, B and C virus (Table 3). Study also given a clear picture of socio economic status in studied population, a large population belongs to poor status (Table 1). This study showed that HEV effected pregnant women in their third trimester. Many research revealed that maternal mortality mostly occurred in last three weeks and affected the young adults.¹² Nurzaireena et al¹³ reported that poor sanitation and contaminated water and food are the major source of hepatitis E virus to spread in a large scale. Poor population didn't afford purified and uncontaminated water to maintain their immunity. In pregnancy, women are highly susceptible to infectious diseases which are vertically transmitted to neonatal. Transmission of hepatitis E virus is oral faecal, research found that the improper sanitation process during rainy season and disturbed sewage infrastructural play a most important role in etiology for jaundice especially in developing countries. Study in Islamabad shown the poor and contaminated hygienic food and water are the leading cause of hepatitis E virus, this condition have been seen after the breakdown of infrastructure between the drinking water and sewage water.¹⁴ Hepatitis A virus and LDL are second cause of jaundice in pregnant. Similar result found in another research having 2% in a patients having intrahepatic cholesterol.¹⁵

The current study found the maternal complication of jaundice. Renal failure, encephalopathy and PPH were the major complication of jaundice. Serum bilirubin, SGOT, SGPT, alkaline phosphatase and platelets are the major maternal morbidity and complication. Sahai et al¹⁶ reported that hepatic failure, renal failure, encephalopathy, HELLP and DIC were a major cause of maternal mortality which is directly correlated to serum bilirubin. Anemia, edema, poor socioeconomic status, blood pressure, early age and poor hygienic and contaminated water were the modifiable factor of maternal morbidity.

CONCLUSIONS

Acute hepatitis E virus infection was the main causative factor. Unhygienic conditions and lack of awareness of hand washing contributes the endemic in young pregnant women of Larkana.

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