

Study to Determine the Maternal and Fetal Outcome of Viral Hepatitis in Pregnancy; A Retrospective Study

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ABSTRACT

Background: Aim: This study was conducted to assess the cause, course of the condition, maternal and fetal outcome of diagnosed viral hepatitis E during pregnancy. Place and Duration: In the Obstetrics and Gynecology department of Lahore General Hospital, Lahore for two years duration from April 2018 to April 2020. **Methods:** A retrospective study was performed and hepatitis infection was found in 130 pregnant women. After the consent of the women, a viral profile was done and included in the study. Hematological and biochemical data were obtained from a database. **Results:** It was found that pregnant women infected with hepatitis during pregnancy 0.97% (130/13385). It was found that women in the 21-30 age group had the highest prevalence 72 cases (55.38%). Most women were in the Primigravida 73 (56.1%) and were detected with hepatitis mainly in the first trimester of pregnancy. Etiologies included HAV in 7 (5.38%) patients, HEV in 110 (84.61%) patients, and HCV in 4 (3.07%) patients, and HBV in 9 (6.92%) patients. After the abdominal examination, 13 (10%) patients had intrahepatic cholestasis. Mothers' results and complications for delivery were analyzed, 49 (37.69%) patients had vaginal delivery, and 74 (56.92%) had a caesarean section, and the most common cause was prolonged leakage per vaginal and fetal distress. **Conclusion:** Hepatitis is a condition that changes into a very scary situation as pregnancy progresses. When it is associated with or coincides with conditions such as pregnancy hypertension, it is even more difficult and faster to deal with complications due to liver failure.

Keywords: Hepatitis E virus, pregnancy, maternal and fetal prognosis, hepatocellular carcinoma.

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INTRODUCTION

Hepatitis infections is a global health problem today. WHO estimated that in 2009, more than 2 billion people were infected with HBE and HBV at some point in their lives, and 350 million people worldwide were chronic HBV carriers. The estimated mortality rate is one million per year.^[1,2] Hepatitis during pregnancy is a controversial situation around the world. Udaya Kumar et al. And Sookia et al. They reported that both fetal and maternal outcomes could range from no complications to worst morbidity and even mortality.^[3,4] The geographical area has a strange relationship with maternal infection. Studies have shown that there is no significant increase in maternal deaths due to hepatitis E in Pakistan. Different types of hepatitis infection have different concerns.^[5,6] Hepatitis A is transmitted from mouth to mouth and does not affect pregnancy, because hepatitis B is taken during pregnancy due to high viral load, has a high vertical transmission rate, which can have serious consequences for child because it can turn into cirrhosis or hepatocellular carcinoma.^[7,8] Hepatitis C is known for its vertical

conductivity leading to hepatocellular carcinoma in mother and child.^[9,10] Hepatitis E is usually self-limiting, pregnancy-free but exacerbates during pregnancy. In general, the relationship between hepatitis and fulminant hepatic insufficiency is high.^[9,10] Singh et al. They reported that they were very concerned about the vertical passage of the hepatitis E virus. Few studies have shown a large difference in clinical course and outcome in pregnancy.^[11,12] Therefore, this study was conducted to investigate the incidence of hepatitis, the clinical course and maternal outcome of pregnant fetuses.

MATERIALS & METHODS

We conducted a retrospective study at the Obstetrics and Gynecology department of Lahore General Hospital, Lahore for two years duration from April 2018 to April 2020. 130 women were diagnosed with hepatitis infection were selected. HELLP, severe preeclampsia, drug-induced hepatitis and acute fatty liver in pregnancy were excluded. Biochemical test reports, liver function tests, coagulation profile and serological tests for anti-HAV IgM, HBs antigen, anti-HEV IgM and anti-HCV IgM were collected and summarized in the table. Clinical course, treatment options have been studied. Maternal complications such as premature uterine contractions, placental rupture and early membrane rupture, as well as fetal complications such as prematurity, fetal ascites, meconium aspiration and

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neonatal jaundice were investigated. Data are expressed in numbers and interest in tables.

RESULTS

During the study, 130 pregnant women out of a total of 13,385 who were registered and delivered to us were infected with hepatitis. The incidence of pregnant women infected with hepatitis during pregnancy was 0.97% (130/13385). Table 1 shows the demographic profile of these women. The average bilirubin level varies between 9.02 ± 9.14 mg / dl. Biochemical parameters are shown in [Table 2].

Table 1: Demographic profile

Categories		Number
Age in years	<20	22
	21-30	72
	>30	36
Gravida	Primigravida	73
	Multigravida	57
Antenatal care	Regular	112
	Irregular	18

Table 2: Biochemical parameters

Biochemical parameters	Mean \pm SD
Total bilirubin in mg/dl	9.04 \pm 9.14
AST in u/l	365 \pm 563.8
ALT in u/l	353 \pm 442.44

Etiologies included HAV in 7 (5.38%) patients, HEV in 110 (84.61%) patients, and HCV in 4 (3.07%) patients, and HBV in 9 (6.92%) patients. After the abdominal examination, 13 (10%) patients had intrahepatic cholestasis [Table 3].

Table 3: Viral marker

Etiology	Number of patients	Percentage
HAV	7	5.4%
HEV	110	84.6%
HCV	4	3.1%
HBV	9	6.9%
HAV+HEV	Nil	Nil
HBsAg + Anti HEV	Nil	Nil

Mothers' results and complications for delivery were analyzed, 49 (37.69%) patients had vaginal delivery, and 74 (56.92%) had a caesarean section, and the most common cause was prolonged leakage per vaginal and fetal distress. Other observed complications were coagulopathy, encephalopathy, and fulminant hepatic failure [Table 4].

Table 4: Maternal outcome and complications

Maternal outcome	HAV	HEV	HCV	HBV
Modes of Vaginal delivery	5	36	3	5
Instrumental	0	7	0	0
Caesarian	0	72	0	2
Coagulopathy	0	7	0	3
Fatal hepatitis	0	6	0	2
Hepatic encephalopathy	0	4	0	0
Maternal mortality	0	3	0	0

130 women with hepatitis gave birth to live children, 3 (2.30%) with early neonatal deaths. There were 7

intrauterine deaths, 1 (0.8%) of stillbirths, 2 (1.7%) of premature neonatal deaths, 39 (30%) of premature births, 34 (26.15%) of low birth weight infants, 27 (20.76%) infants required ICU admission [Table 5].

Table 5: Fetal outcome

Fetal outcome	HAV	HBV	HCV	HEV
Preterm	0	37	0	3
Intra uterine fetal demise	0	4	0	3
Neonatal icteric	4	42	0	4

DISCUSSION

Hepatitis is the most common cause of jaundice in pregnancy, with a wide range of effects, from asymptomatic to fatal. In pregnancy, most hepatitis cases remain unchanged, while hepatitis E has a very lethal outcome and is associated with the highest cause of maternal death in endemic regions.^[11,12] During pregnancy, most hepatitis cases remain unchanged, while hepatitis E has a very lethal outcome and is attributed to the greatest cause of maternal mortality in endemic areas.^[13,14] In the study, the majority of cases of infection were recorded between 21 and 30 years of age, which corresponds to (65) 57.01%, which is consistent results obtained by Sahai et al., Krishnamoorthy et al.^[15,16] And Madan et al. Most women belonged to the lower average socio-economic status and from an educational point of view (67) 5 8.7% were literate, while 70% were illiterate in Shukla et al.^[17,18] And up to 73.8% in a study by Ashoka et al. Primigravida (65) 57.01% was the largest group of women diagnosed with viral infection, and 56 (49.1%) were diagnosed for the first time with no signs of pregnancy, which was similar to the result obtained by Veronica et al (48%).^[19,20] A study by Elsheikh et al. He states another result that the second gravid has the highest prevalence. Hepatitis E infection was responsible for the maximum number of cases of viral infection in our study. Similar results were reported in a study by Shukla et al.^[21,22] While in the study of Jaiswal et al. And Aziz et al. Hepatitis E has been reported to be the most common virus. In our study, there was no maternal mortality attributable to the low incidence of hepatitis E, some studies by Sahai et al. In the third trimester of pregnancy and in women with irregular prenatal control, morbidity in the form of coagulation failure, encephalopathy and fulminant liver failure was observed.^[23] Most studies do not provide a comprehensive fetal performance report. Of 130 women infected with hepatitis, preterm delivery was performed, and this situation is Patra et al. (65%) and Kumar et al. It is much lower than the result reported by (70%) women had intrauterine fetal death and neonatal jaundice was observed in 42 (36.8%) infants. The pediatrician below gave immunizations and immunoglobulins to all children.

CONCLUSION

Women infected with hepatitis during pregnancy can cause fetal destruction and an increase in maternal morbidity. Hepatitis E is the highest cause of most studies in our hospital. The need for hospitalization of women with jaundice should be strongly emphasized and treated.

REFERENCES

- Seto MT, Cheung KW, Hung IF. Management of Viral Hepatitis A, C, D and E in pregnancy. Best Practice & Research Clinical Obstetrics & Gynaecology. 2020 Mar 21.
- Asghar S, Maqbool S. Fetomaternal Outcome in Pregnant Women with Acute Hepatitis E. Journal of Gynecology and Obstetrics. 2019;7(6):166-9.
- Negi LM, Pathania K, Kumar D. Maternal And Fetal Outcome Among Pregnant Women With Jaundice Attending A Tertiary Care Institute In Northern India.
- Sethi S, Prasad S. Study To Determine The Fetal And Maternal Outcome In Acute Viral Hepatitis. International Journal of Medical and Biomedical Studies. 2019;3(9):1-5.
- Kashyap R, Joshi I, Gupta D, Prashar A, Minhas S. Characteristics and obstetric outcomes in pregnant women with Acute Hepatitis E Virus Infection in tertiary care hospital of Himachal Pradesh. J Assoc Physicians India. 2019;67(4):20-2.
- Kar P, Sengupta A. A guide to the management of hepatitis E infection during pregnancy. Expert review of gastroenterology & hepatology. 2019;13(3):205-11.
- Chen HL. Mother-to-Infant Transmission of Viral Hepatitis. In Viral Hepatitis in Children 2019 (pp. 55-69). Springer, Singapore.
- Changede P, Chavan N, Raj N, Gupta P. An observational study to evaluate the maternal and Foetal outcomes in pregnancies complicated with jaundice. The Journal of Obstetrics and Gynecology of India. 2019;69(1):31-6.
- Changede P, Chavan N, Raj N, Gupta P. An observational study to evaluate the maternal and Foetal outcomes in pregnancies complicated with jaundice. The Journal of Obstetrics and Gynecology of India. 2019;69(1):31-6.
- Zhao H, Dai Y, Zhou YH. Overview of infection causing hepatitis other than non-A to E hepatitis virus during pregnancy. Best Practice & Research Clinical Obstetrics & Gynaecology. 2020 Mar 9.
- Qureshi AN, Taqi T, Khatoon H, Ahmed I. Risk factors and fetomaternal outcome in pregnancy with thrombocytopenia. The Professional Medical Journal. 2019;26(11):1942-6.
- Berglöv A, Hallager S, Weis N. Hepatitis E during pregnancy: Maternal and foetal case- fatality rates and adverse outcomes—A systematic review. Journal of Viral Hepatitis. 2019;26(11):1240-8.
- Ducarme G, Maire F, Chatel P, Cao S, Dao NC, Roloff K, Goldberg AS, Hegele RA, Wong B, Ooi TC, Keely E. Acute viral hepatitis C-induced jaundice in pregnancy. Obstetric Medicine. 2019;12(2_suppl):3-57.
- Seet MJ, Bhattacharya S, Shetty A. Maternal and Perinatal Outcomes in women with Hepatitis B Carrier State. Journal of Women Health Care and Issues. 2019 Mar 22.
- Singh S, Daga MK, Kumar A, Husain SA, Kar P. Role of oestrogen and its receptors in HEV- associated fetomaternal outcomes. Liver International. 2019;39(4):633-9.
- García-Romero CS, Guzman C, Cervantes A, Cerbón M. Liver disease in pregnancy: Medical aspects and their implications for mother and child. Annals of hepatology. 2019;18(4):553-62.
- Abu Freha N, Wainstock T, Poupko L, YonatShemer A, Sergienko R, Sheiner E. Maternal hepatitis B or hepatitis C virus carrier status and long- term infectious morbidity of the offspring: A population- based cohort study. Journal of Viral Hepatitis. 2020 May 3.
- Hamburg-Shields E, Prasad M. Infectious Hepatitis in Pregnancy. Clinical Obstetrics and Gynecology. 2020;63(1):175-92.
- Casey LC, Fontana RJ, Aday A, Nelson DB, Rule JA, Gottfried M, Tran M, Lee WM, Acute Liver Failure Study Group. Acute Liver Failure (ALF) in Pregnancy: How Much Is Pregnancy- Related?. Hepatology. 2020 Jan 28.
- Cai Q, Liu H, Han W, Liu L, Xu Y, He Y, Li Q, Zhang M, Hu A, Zheng Y. Maternal HB sAg carriers and adverse pregnancy outcomes: A hospital- based prospective cohort analysis. Journal of viral hepatitis. 2019;26(8):1011-8.
- Chowdhury D. Acute Hepatitis E Virus Infection in Pregnancy: A Mini Review. EC Gastroenterology and Digestive System. 2019;6:01-5.
- Khuroo MS. A Review of Acute Viral Hepatitides Including Hepatitis E. In Viral Hepatitis: Acute Hepatitis 2019 (pp. 77-107). Springer, Cham.
- Tanrıverdi EÇ, Özkurt Z, Kadoğlu BG, Alay H, Çalıkoğlu O, Koca Ö, Kamalak Z. Seroprevalence of hepatitis B, hepatitis C, and HIV in pregnant women from Eastern Turkey. The Turkish Journal of Gastroenterology. 2019;30(3):260.

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