IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 15, Issue 3 Ver. I (Mar. 2016), PP 81-84
www.iosrjournals.org

HEV Jaundice- a Leading Cause of Maternal & perinatal Morbidity and Mortality

Dr. Bina M. Raval[1], Dr. Ami V. Mehta[2], Dr. Manoj B. Vala[3], Dr Sanjay P. Munshi[4], Dr. Paras V. Dobariya[5], Dr. Aastha R. Mehta[6]

[1]*Assistant professor*
[2]*Associate professor and fellow fetal medicine*
[3]*Third year resident*
[4]*Professor and Head of unit*
[5]*Second year resident*
[6]*Second year resident*
Department of Obstetrics &Gynecology, Smt N.H.L Municipal Medical College, Ahmedabad-380006, Gujarat, India

Abstract
Background: *Jaundice in pregnancy, whilst relatively rare, has potentially serious consequences for maternal and fetal health.*
Aim: *Determine the real burden of disease & impact of improved obstetric care on incidence, risk factors, management modalities and feto-maternal outcome of HEV hepatitis in pregnancy.*
Methods: *This was a retrospective study of 52 patients admitted in department of Obstetrics and Gynaecology at a tertiary care hospital with Hepatitis E jaundice during 3rd trimester of pregnancy from September 2013 to September 2015.*
Results: *During the study period 17320 deliveries took place, out of which 52 patients were admitted with HEV jaundice during 3rd trimester of pregnancy. Out of 52 patients, 86.54% of patients delivered vaginally and 13.46% of patients were delivered by LSCS. 84.62% of patients had preterm delivery and 15.38% of patients delivered at term. Live births were 67.3% and still births were 21.15%. Low Birth Weight (LBW) babies were 76.92%. 32.69% of babies required NICU admission of which 15.38% were died within 7 days of birth. Perinatal mortality was 36.53% and maternal mortality was 23.07%.*
Conclusions: *HEV jaundice during 3rd trimester of pregnancy has a grave prognosis with high rate of preterm delivery, fetal distress, still birth and high perinatal& maternal morbidity and mortality. Routine antenatal care along with early detection and aggressive management of HEV in pregnancy at a tertiary care centre with multidisciplinary approach will help in reduction of maternal and perinatal morbidity and mortality.*
Abbreviations:*HEV- hepatitis E virusLSCS- lower segment caesarean sectionNICU- neonatal intensive care unitDIC- disseminated intravascular coagulation*
Key Words: *HEV jaundice in Pregnancy, perinatal morbidity & mortality, maternal morbidity & mortality*

I. Introduction

Viral hepatitis is the most common cause of jaundice in pregnancy and pregnancy with jaundice is considered as a high risk pregnancy[1]. Hepatitis E is probably the most common cause of acute hepatitis in pregnancy[2]. This water-borne RNA virus usually is enterically transmitted by contaminated water supply. It causes epidemic outbreaks in third-world countries with substantial morbidity and mortality rates. Pregnant women have a higher case fatality rate than non-pregnant individuals. Fulminent hepatitis, although rare overall, is more common in pregnant women and contributes to the increased mortality rates especially in 3rd trimester of pregnancy[3]. Higher hepatitis E viral load and increased cytokine secretion in pregnant compared with non-pregnant women may be the factors responsible for progression of the disease to fulminent hepatitis[4].

II. Methods

All pregnant women affected with HEV jaundice during third trimester of pregnancy, who were admitted in the department of Obstetrics and Gynaecology at a tertiary care hospital from September 2013 to September 2015, are studied retrospectively. After prior permission, data regarding investigation done, treatment offered after admission in ward, need of transfusion of blood & blood products, associated complications, delivery and maternal &perinatal morbidity & mortality were analysed.

III. Results

During the study period 17320 deliveries took place at our centre, out of which, 52 patients had HEV jaundice during 3rd trimester of pregnancy.

Table-1: Liver Function Tests

INVESTIGATIONS (N=52)		NUMBER	PERCENTAGE (%)
Serum bilirubin (Normal 0.2-1.2 mg/dl)	2-4 mg/dl	16	30.77%
	5-10 mg/dl	8	15.38%
	11-15 mg/dl	18	34.61%
	>15 mg/dl	10	19.23%
ALT (SGPT) (Normal 0-55 U/L)	<100 U/L	18	34.61%
	100-1000 U/L	28	53.85%
	>10000 U/L	6	11.54%
S. Alkaline phosphatase (Normal 50-150 U/L)	Raised	36	69.23%
	Normal	16	30.77%

Table-2: Coagulation Profile

TEST (N=52)		NUMBER	PERCENTAGE (%)
Prothombin time(PT) INR > 1.5	Prolonged	16	30.77%
	Normal	36	69.23%
APTT INR > 1.5	Prolonged	16	30.77%
	Normal	36	69.23%
FDP and D-dimers	Raised	15	28.85%
	Normal	37	71.15%

Table-3: Pregnancy Outcome

OUTCOME			NUMBER	PERCENTAGE (%)
DELIVERY (N=52)	Vaginal 45(86.54%)	Spontaneous	41	91.11%
		Induced	4	8.89%
	LSCS 7(13.46%)		7	100%

Table-4: Perinatal Outcome

PERINATAL OUTCOME(N=52)		NUMBER	PERCENTAGE (%)
Preterm		44	84.62%
Full term		8	15.38%
Live births		35	67.3%
Still birth		11	21.15%
Meconium at birth		11	21.15%
Weight	<2 kg	28	53.85%
	2-2.5 kg	12	23.07%
	>2.5 kg	10	19.2%
NICU admission		17	32.69%

Table-5: Administration Of Blood Component

Blood & blood component	NUMBER (more than 1 component in each patient)	PERCENTAGE (%)
PCV	17	32.69%
FFP	35	67.31%
PRC	32	61.54%
CRYOPRECIPITATE	21	40.38%

Table-6: Maternal Morbidity And Mortality

COMPLICATIONS	NUMBER	PERCENTAGE (%)
DIC	16	30.77%
Hepatic Encephalopathy	9	17.30%
Renal failure	5	9.62%
Septicaemia	6	11.54%
Postpartum haemorrhage	3	5.77%
Wound infection	2	3.85%
Maternal mortality	12	23.07%

IV. Discussion

During study period total 17320 deliveries took place, out of which 52 patients were admitted with Hepatitis E jaundice during 3rd trimester of pregnancy. So prevalence of HEV jaundice in our study was 0.3%.

In present study, 55.76% of patients were aged between 20-24 years. 28.5% of patients were illiterate and 73.07% of patients were from lower socio-economic class. Hence, illiteracy and poor indwelling conditions

responsible for bad hygiene & contaminated drinking water supply matter a lot for acquiring hepatitis E infection during pregnancy[5,6,7].In this study, 25 (48.07%) patients were primigravida out of which, 4 patients were delivered by LSCS[8]. Out of 4 patients, 3 patients developed hepatic encephalopathy and died and 1 patient had wound gap which was managed by resuturing later on.In present study, 69.22% of patients had serum bilirubin> 5 mg/dl, elevated liver enzymes were found in 69.23% of the patients and 30.77% of patients had altered coagulation profile.Derangement of haematological and biochemical tests is specific to Hepatitis E jaundice during pregnancy[9]. In present study maternal mortality was 23.07% (12 patients out of 52) of which 6.9%, 18.1% and 81.6% of maternal death occurred at initial serum bilirubin concentration <10 mg%, 10-15 mg% and 15-20mg% respectively.Maternal mortality is directly proportional to initial serum bilirubin concentration[10].

In this study, out of 52 patients who delivered 86.54% of patients were delivered vaginally. Induction of labour was done with prostaglandin (Dinoprostone) gel (PGE2) in 8.89% patients and all of them delivered vaginally[9]. 7 patients (13.46%) were delivered by LSCS.Out of 7 patients who were delivered by LSCS, 3 patients were complicated by DIC and Hepatic encephalopathy, 2 patients had renal failure and septicaemia and 2 patients had wound infection. Maternal mortality among LSCS patients was 71.43% (5 out of 7). Hence, rate of complications is higher in LSCS patients as compared to vaginal delivery.In present study, 84.62% had preterm delivery of which 30.77% of deliveries were between 28-32 weeks and 53.85% of deliveries were between 33-37 weeks of gestation and 15.38% of patients delivered at term.Live births were 67.3% and still births were 21.15%. Low Birth Weight (LBW) babies were 76.92%.32.69% of babies required Neonatal Intensive Care Unit admission of which 15.38% were died within 7 days of birth. Perinatal mortality was 36.53%. As per World Health Organization (WHO), Hepatitis E during pregnancy is associated with prematurity, low birth weight and an increased risk of perinatal mortality up to 33%[11,12,13,14,15,16].Common causes associated with neonatal deaths were respiratory distress syndrome, asphyxia neonatorum, septicaemia and jaundice.

Packed cell Volume was transfused in 32.69% of patients and 67.31%, 61.54% & 40.38% of patients wererequired fresh frozen plasma, platelet rich concentrate and cryoprecipitate respectively. Each patient required more than one blood and/or blood components. Availability of Blood and Blood components have helped in reducing maternal morbidity and mortality.In our study, maternal mortality was 23.07% (12 patients out of 52) of which 10 maternal deaths occurred amongst emergency admissions who were referred to our centre which is a tertiary care centre at a later stage of Hepatic encephalopathy. All patients died during postpartum period. Causes for maternal mortality were DIC, Hepatic encephalopathy, acute renal failure, shock and pulmonary embolism. More than one complication was found in each patient. DIC was the most common complication in 19.23% of patients followed by Hepatic Encephalopathy in 17.30% of patients. Other complications were renal failure in 9.62%, septicaemia in 11.54%, post-partum haemorrhage in 5.77% and wound infection in 3.85% of patients. Begum et al[17], Shukla et al[6] and WHO[16] have reported maternal mortality rate of 30.3%, 33.3% and 20% respectively.

V. Conclusions

Acute hepatitis E in a pregnant woman in 3rd trimester has a grave prognosis with high maternal morbidity and mortality due to DIC, hepatic encephalopathy and septicaemia. Higher bilirubin levels are associated with higher mortality. There is a high risk of preterm delivery, still birth, foetal distress and meconium aspiration leading to high perinatal morbidity and mortality. Low socio economic class, illiteracy and poor hygiene are predisposing factors for HEV jaundice in pregnancy. Awareness regarding hygiene and different modes of transmission of HEV infection will helps in reducing the incidence of HEV infection. Routine antenatal care along with early detection and aggressive management of HEV in pregnancy at tertiary care centre with multidisciplinary approach will help in reduction of maternal and perinatal morbidity and mortality.

References

[1]. Viral hepatitis in the who South-east Asia Region: Know it, confront it-Hepatitis affects everyone everywhere http:www.searo.who.int/ as accessed on26/10/2013
[2]. Hoofnagle JH, Nelson KE, Purcell RH: Hepatitis E. N Engl J Med 367:13, 2012.
[3]. Labrique AB, Sikder SS, KrainLj, et al: Hepatitis E, a vaccine preventable cause of maternal deaths. Emerg Infect Dis 18(4):1401, 2012.
[4]. Borkakoti J, Hazzam RK, Mohammad A, et al: dose high viral load of hepatitis E virus influence the severity and prognosis of acute liver failure during pregnancy? Med Virol 85(4):620, 2013.
[5]. Caro M, Kazanji M: hepatitis E is highly prevalent among pregnant women in Global Central Africa with different patterns between rural and urban areas. Virology Journal 2008; 5:158.
[6]. Shukla S, Mehta G, Jais M, Singh A. prospective study on acute viral hepatitis in pregnancy: sero-prevalence and fetomaternal outcome of 100 cases. Journal Biosci Tech 2011; 2:279-86.
[7]. Kumar RM, Uduman S, Rana S, Kochiyil JK, Usmani A, Thomas L. sero-prevalence and mother to infant transmission of Hepatitis E virus among pregnant women in United Arab Emirates. Eur Journal Obstet Gynecol ReprodBiol 2001; 100:9-15.

[8]. Mahalat M, Hammad R, Rubina T; feto-maternal outcome in HEV infection. Annals Vol 2011; 17(1)86-90.
[9]. TahiraYasmeen, Haleema A. Hashmi and Aisha Taj. Journal of the College of physicians and surgeons Pakistan 2013; 23(10):711-714.
[10]. NagariaTripti, AgrwalSarita. Feto-maternal outcome in jaundice in pregnancy. J Obstet Gynecol India 2005; 55:424-7.
[11]. Kumar A, Beniwal M, Kar P, Sharma JB, Murthy NS. Hepatitis E in pregnancy. Int Journal Gynecol Obstet 2004; 85:240-4.
[12]. Suruchi S, Geeta M, Manoj J, Abha S. A prospective study on acute viral Hepatitis in Pregnancy; Seroprevalence and fetomaternal outcome of 100 cases; J Biosci Tech 2011; 2(3):279-286.
[13]. Ahmed RE, Karsrny MS, Adam I. Brief report: Acute viral hepatitis and poor maternal and perinatal outcome in pregnant Sudanese women. Journal Med Virol 2008; 80:1747-8.
[14]. Banait VS, Sandur V, Parikh F, Ranka P, Sasaidharan, Sattar et al. Outcome of acute liver failure due to acute hepatitis E in pregnant women. Indian Journal Gastroenterol 2007; 26:6-10.
[15]. Patra S, Kumar A, Trivedi SS, Puri M, Sarin Sk. Maternal and fetal outcomes in pregnant women with acute hepatitis E virus infection. Ann Intern Med 2007; 147:28-33.
[16]. World Health Organization. Hepatitis E: fact sheet N-280 http://www.who.int/mediacentre/factsheets/fs280/en/index.html as accessed on 26/10/2013
[17]. Begum N, Polipalli SK, Hussain SA, Kumar A, Kar p. Duration of hepatitis viremia in pregnancy. Int Journal Gynaecol Obstet 2010; 108:207-10.
[18]. Williams Obstetrics, 23rd edition, section 8, chapter 50, hepatic, gall bladder and pancreatic disorders, p: 1050-1063.