PREVALENCE AND CLINICAL STUDY OF PREGNANT WOMEN WITH HEPATITIS B INFECTION- AN INSTITUTIONAL EXPERIENCE

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ABSTRACT

BACKGROUND

Hepatitis B Virus infection is a common public health problem in India. During pregnancy, there is risk of exacerbation and vertical transmission to infant. The purpose of this study is to assess the prevalence and Pregnancy outcome in women with Hepatitis B infection.

MATERIALS AND METHODS

149 women with Hepatitis B (HBsAg Positive) were retrospectively studied and their obstetric outcome analysed.

RESULTS

The prevalence of Hepatitis B was 1.4%, the average age of mother being 27 years. Amongst the study population 107 (71.81%) had vaginal delivery, 42 (28.19%) had LSCS. Associated obstetric complications were seen in 45 (30.2%), the major ones being pregnancy induced hypertension in 16 (10.74%), premature rupture of membranes in 11 (7.38%), meconium stained liquor in 8 (5.37%), anaemia in 8 (5.37%). Average birth weight 2.5 KG. NICU admission were 8 mainly for RDS, meconium aspiration and septicaemia. Stillbirths were 4 (2.6%).

CONCLUSION

Hepatitis B Positive mothers were asymptomatic and had good Obstetric outcome. LSCS rate and Obstetric complications were comparable with Hepatitis B Negative mothers. Active and passive immunisation of the neonate is the main stay of management.

KEYWORDS

HBsAg Positive, Hepatitis B Infection, Pregnancy, Maternal and Foetal Outcome.

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BACKGROUND

Hepatitis B is endemic in Asian and African countries. Prevalence varies from 0.1 to 20% worldwide. There are 400 million chronic carriers in the world.^[1] Indian subcontinent comes under intermediate prevalence. Carrier rate of hepatitis B varies in different regions of India. The overall carrier rate is often quoted as being 4.7%.^[2] Lodha, et al^[3] did a systematic review of literature and concluded that the true prevalence of Hepatitis B in India was 1 to 2%. Recent study shows a prevalence of 0.5 to 1.01% in India.^[4,5] It causes acute and chronic hepatitis, cirrhosis and Hepatocellular Carcinoma.^[6] Vertical transmission is one of the predominant means of transmission from mother to child in developing countries. The other groups at risk for hepatitis B infection are IV drug abusers, partners of infected individuals and those who frequently receive blood products.

CDC and advisory committee on immunisation practices and ACOG have all strongly recommended universal HBsAg screening of pregnant woman to prevent perinatal transmission.

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Most HBV infections identified during pregnancy are chronic asymptomatic and diagnosed by routine prenatal serological screening.

After acute infection, up to 12% of affected adults and up to 90% of infected neonates may become chronic carriers. When the mother is positive for viral DNA in her serum, vertical transmission rate is up to 90%.

HBeAg positivity suggests high infective status. HBeAb positivity suggests low risk of spreading infection as compared to HBeAg positive.

Transplacental viral infection is uncommon and most neonatal infections are transmitted by peripartum exposure. There is no evidence to suggest that caesarean delivery lowers the risk.^[7]

Although the virus is present in breast milk, incidence of transmission is not lowered by formula feeding.

Adverse pregnancy outcome like PIH, GDM, Preterm labour and LBW were documented in few studies.

RCOG Suggests Further Evaluation of Patients Who Test Positive for HBsAg. These are-

- HBV serology - including HBeAg status.
- HBV DNA level.
- Delta virus testing.
- HCV testing.
- Liver function tests, including tests of synthetic function (INR).
- Liver ultrasound.

NICE Guidelines suggest following steps in patients who test positive for HBsAg.

Discuss with pregnant women the benefits and risks of antiviral treatment for them and their baby.

Offer tenofovir disoproxil to women with HBV DNA greater than 10^7 IU/ml in the third trimester to reduce the risk of transmission of HBV to the baby.

Monitor quantitative HBV DNA 2 months after starting tenofovir disoproxil and ALT monthly after the birth to detect postnatal HBV flares in the woman.

Stop tenofovir disoproxil 4 to 12 weeks after the birth unless the mother meets criteria for long-term treatment.

Offer active and passive hepatitis B immunisation in infants and follow up in line with the guidance bel.

In our setup, asymptomatic HBsAg positive patients are not subjected to further immunological evaluation due to economic constraints and neonatal immunoprophylaxis given to all. We tried to assess overall obstetric outcome in this population to assess institutional management in Indian scenario.

MATERIALS AND METHODS

It is a retrospective observational study conducted at KIMS, a tertiary care institute situated in North Karnataka, India catering to the people of surrounding 5 Districts and conducting 10,000-11000 deliveries per year. All the antenatal cases with HBsAg positive admitted for delivery during one year i.e. from Jan 2016 to Dec 2016 were included in the study. Rapid diagnostic test was used. All case sheets were studied in detail (Excel sheet prepared) and data analysed.

RESULTS

Total no of deliveries during the period were 10539. HBsAg positive patients were 149 (Prevalence 1.4%) and 10390 were HBsAg Negative. Average gestational age was 27 years (Range from 19 to 35 years). Among them 56 (37.58%) cases were booked with us, 71 (47.65%) cases were booked elsewhere and referred, 22 (14.77%) cases were unbooked. Out of 149, Primigravida were 53 (35.58%), 2nd gravida were 76 (51%), third (three and above) gravida were 20 (13.42%). 107 (71.81%) patients were delivered vaginally, and 42 (28.19%) underwent LSCS. Among them, term deliveries were 141 (94.63%) and preterm were 8 (5.37%).

Obstetric complications observed: pregnancy induced hypertension (PIH) 16 (10.47%), premature rupture of membrane (PROM) 11 (7.38%), meconium stained amniotic fluid (MSAF) 8 (5.37%) and anaemia 8 (5.37%). No cases of gestational diabetes mellitus (GDM) or Low birth weight (LBW) were noted. 98 cases [65.77%] did not have any associated obstetric complications. Average birth weight was 2.5 KG (Range 1.8 to 3.5 KGs). Eight babies were admitted to NICU for Respiratory distress, meconium aspiration and septicaemia. 4 were Intra Uterine Foetal Death (IUFD).

Type	Number (Percentage) N=149
Booked with us	56 (37.58%)
Booked Elsewhere	71 (47.65%)
Un booked	22 (14.77%)
Table 1. Booked status of study population	

Gravid Status	Number (Percentage) N=149
Primi	53 (35.58%)
Second	76 (51%)
Third and above	20 (13.42%)
Table 2. Gravid status of study population	

Type	Number (Percentage) N=149
Term	141 (94.63%)
Preterm	8 (5.37%)
Table 3. Foetal maturity population	

Mode of Delivery	Number (Percentage) N=149 HBsAg Positive	Number (Percentage) N=10390 Non HBsAg Positive
Vaginal Delivery	107 (71.81%)	6880 (66.22%)
LSCS	42 (28.19%)	3510 (33.78%)
Table 4. Mode of Delivery		

Obstetric Complications	Number (Percentage) N=149 HBsAg Positive	Number (Percentage) N=10390 Non HBsAg Positive
PIH	16 (10.74%)	1995 (19.2%)
PROM	11 (7.38%)	663 (6.38%)
MSAF	8 (5.37%)	90 (0.87%)
Anaemia	8 (5.37%)	2432 (23.41%)
IUFD	4 (2.68%)	50 (0.48%)
Table 5. Obstetric complications		

DISCUSSION

In our study the prevalence rate is 1.4%. The prevalence rate is slightly on higher side as it is a tertiary referral centre where high risk cases get pooled up. Routine anti natal screening for hepatitis B is done in all cases in our institute.

National Institute for Health and Clinical Excellence advises against elective Caesarean section for the prevention of mother-to-child transmission of hepatitis B, as evidence on this issue is insufficient.

The incidence of PIH in our study is high compared to other studies. This can be explained by the fact that this region is endemic for PIH. In our study incidence of PIH among HBsAg positive women was lower than non HBsAg positive women. It is comparable to the study conducted by To et al, where there was a lower risk for gestational hypertension and pre-eclampsia than in non-carrier.^[8]

Our study did not suggest a higher rate of preterm delivery. Whereas a study of Tse KY et al which suggests an increased risk of preterm delivery in HBsAg positive woman.^[9]

Average birth weight in our study population is 2.5 kg. In a study done by Shui-Lam MAK et al 'HBsAg carriers delivered slightly larger babies'. In our study, there were no cases of GDM. However, according to the Hong Kong College of Obstetricians and Gynaecologists, HBsAg carriage is regarded as a risk factor for GDM in Asian women.

A study done in Canada showed that hepatitis is not associated with increase in abortion, still birth and congenital malformation. However, prematurity is likely to increase if hepatitis is acquired in the last trimester.^[10]

Some studies have also demonstrated that infants born to mothers with acute infection during pregnancy have low birth weights.^[11]

In our study, all cases were asymptomatic. LFT & PT INR were done in only booked cases and they were normal in all the cases.^[10]

CONCLUSION

Our study suggested a point prevalence of 1.4%. Other studies have found prevalence rates ranging from 0.5% to 15.9%. Incidence varies from place to place and hospital to hospital. And they being hospital studies, they are not representative of prevalence in general population. Prevalence pattern is skewed depending on referral patterns. Obstetric outcome in HBsAg positive women is similar to HBsAg negative population.

Universal screening of all pregnant women and active and passive immunisation of the neonate are important

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