Pregnancy Outcome in Hepatitis B and C Positive Mothers

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Aims: To see frequency of hepatitis B and C in pregnant patient and the pregnancy outcome in hepatitis B and C positive mothers. **Study design:** descriptive study. **Setting:** This study was conducted in Gynae unit III and labour ward Nishter hospital Multan from Jan 04 to Mar 05 in collaboration with Central Laboratory in our hospital. **Material and methods:** All pregnant patients admitted through OPD and labour ward who were found hepatitis B and C positive during screening were included in this study. Patient with chronic liver disease, cirrhosis and acute hepatitis due to A and E virus were excluded. A detailed history was taken followed by clinical examination. Routine investigation including liver function test and abdominopelvic ultrasound for fetal assessment and maternal liver status was done. Investigations were correlated clinically and physicians were involved accordingly. After delivery mother and baby were evaluated for any complication and babies of hepatitis B positive mothers were vaccinated. **Results:** Out of 1336 patients screened in 15 months of period, 135 (10%) were hepatitis B positive, 89(6.6%) hepatitis C positive and 11(.8%) were both hepatitis B and C positive. Past history of surgery was positive in 30 (15%), blood transfusion in 10 (5%), jaundice in 6 (3%) and I/v drug use in 2 (1%) patients. In current pregnancy 176(88%) women were asymptomatic and 6(3%) developed jaundice, 12 (6%) had nausea and vomiting, 4 (2%) had fever and one patient presented with features of hepatic encephalopathy. Overall incidence of the hepatitis B and C was 17.5 % and no neonatal death was reported. **Conclusion:** This small hospital based study shows that HBV and HCV infections is quiet frequently seen in women of reproductive age however it does not adversely affect pregnancy outcome and pregnancy does not induce any detoriation of liver disease. In a developing country like Pakistan it is an urgent need of the hour to create awareness amongst masses about safe sex, hazards of blood transfusion and I/v drug use. Information regarding incidence, prevalence and disease course of hepatitis and pregnancy still needs a lot of work.
Key words: Hepatitis, morbidity, mortality pregnancy.

Viral hepatitis is one of the most serious infections in pregnant women. There are now at least five hepatitis viruses, out of which hepatitis B (HBV) and C (HCV) are the common and world wide. HBV affects more than 350 million people in the world and prevalence of HCV in industrialized countries is 1-2% with greatest reported incidence in adults aged 20-39 years[1]. 60%-70% of patients with acute HCV infection are asymptomatic. About one half of acute HBV infections are symptomatic in adults with 1% of cases resulting in acute liver failure and death. Although 1-10% of the healthy adults and over 90% of the infected babies may fail to clear the virus and become chronic carriers[2], acutely infected individuals develop clinically apparent acute hepatitis with loss of appetite, nausea, vomiting, fever, abdominal pain and jaundice.

HBV is found in highest concentrations in the blood, and lower concentrations in semen, vaginal secretions, and wound exudates. Sexual transmission accounts for most adult HBV infections in the United States. Sexual transmission of HCV appears to be inefficient relative to hepatitis B virus (HBV). Intravenous drug use currently accounts for 60% of HCV transmission in the United States. Transmission between sexual partners of persons with chronic HCV infection with no other risk factors for infection is about 5% (range, 0% to 15%). Household contact with an infected person has been associated with a nonsexual transmission rate of 4% (range, 0% to 11%)[3].

The relevance of HCV and HBV infection to maternal-fetal medicine is the high risk of vertical transmission, predisposition of the infected neonate to become a chronic carrier and the potential for eradication by immunization. 10-20% of women seropositive for HBsAg transmit the virus to their neonates in the absence of immunoprophylaxis[4]. In women who are seropositive for both HBsAg and HBeAg vertical transmission is approximately 90%. In patients with acute hepatitis B, vertical transmission occurs in up to 10% of neonates when infection occurs in the first trimester and in 80 -90% of neonates when acute infection occurs in the third trimester. However 7-8% of hepatitis C virus-positive women transmit hepatitis C virus to their offspring with a higher rate of transmission seen in women co infected with HIV.

In UK, it is recommended that the antenatal population should be screened for HBV so that immunization can be instituted for the offspring of carriers. National guidelines advise that all the women have information on and assess to HBV screening as a part of their antenatal care and all the babies born to mothers with HBV infection receive immunization at or soon after birth[5]. Unlike HBV there is no means of immunization against the vertical transmission of the hepatitis C.

Hepatitis B and C infection does not appear to be teratogenic. However, there appears to be a higher incidence of low birth weight among infants born to mothers with acute infection during pregnancy. In one small study acute maternal hepatitis (type B or nontype B) had no effect on the incidence of congenital malformations, stillbirths and abortions. Pregnancy does

not appear to be adversely affected by chronic HCV and HBV infection. Breastfeeding does not appreciably increase the risk of transmitting HCV and HBV to a neonate[6].

The primary aim of this study was to see the frequency of HCV and HBV in pregnant patients and determine the pregnancy outcome in hepatitis B and C positive mother in Nishter Hospital Multan.

Material and methods:

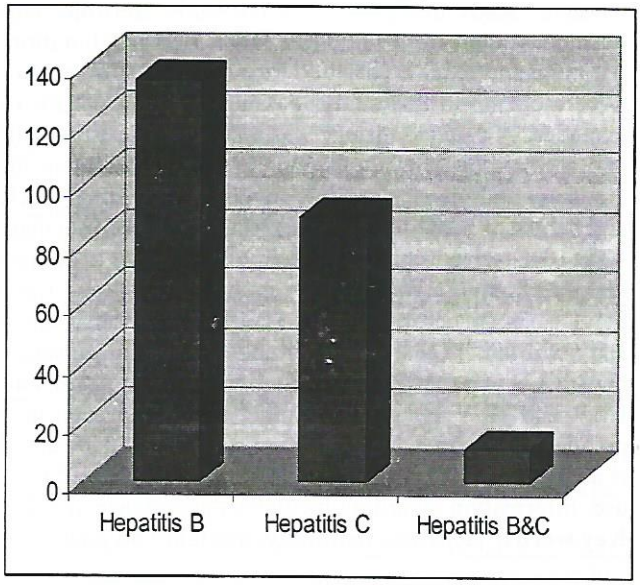
All antenatal patients admitted through outpatient department and labour ward who were found hepatitis B and C positive during screening were included in this study. Patient with chronic liver disease, cirrohsis and acute hepatitis due to A and E virus were excluded. A detailed history was taken regarding the history of jaundice, nausea vomiting, loss of appetite and fever in current pregnancy. Patients were inquired about past history of jaundice, any blood transfusion, surgery, I/v drug use and contact. Detailed clinical examination including general physical examination and systemic examination was done. Routine investigation including complete blood count, random blood sugar, urine examination, and liver function test was done. Abdominopelvic ultrasound was done for assessment of fetal wellbeing and status of maternal viscera's especially liver.

Viral markers for HBV and HCV were checked in Central Laboratory Nishter Hospital Multan. Australian antigen (HBsAg) was checked by using HBsAg Test Device (Accurate, American) and antibody for HCV (anti-HCV) by using anti-HCV Test Device (Accurate, American).Investigations were correlated clinically and physicians were involved accordingly. Partographic record of the labour was maintained and CTG was used for fetal assessment. After delivery, mother and baby were evaluated for any complication. All babies were examined by pediatrician immediately after delivery and after 24 hours. Babies of hepatitis B positive mothers were vaccinated both for active and passive immunization.

Results:

Total number of the patient screened in 15 months of period were 1336, out of which 135 (10%) were hepatitis B, 89(6.6%) hepatitis C and 11(.8%) were both hepatitis B and C positive. 200 patients went into labour and 170(85%) delivered vaginally and 30(15%) delivered by c-section. Past history of surgery was positive in 30 (15%), blood transfusion in 10 (5%), jaundice in 6 (3%) and I/v drug use in 2 (1%) patients. In current pregnancy 176(88%) women were asymptomatic and while there was history of jaundice in 6 (3%), nausea and vomiting in 12 (6%), fever in 4 (2%) and one patient presented with features of hepatic encephalopathy. During investigations Liver Function Test were deranged in 20 (10%) cases and coagulation profile was disturbed in one patient. All patients delivered safely. The mean birth weight was 2.9kg. 3% had preterm labour and 6 (3%) babies were hospitalized with out any mortality. All babies delivered to HBV positive mothers were immunized both actively and passively.

Frequency of hepatitis B & C (n=1336)



Discussion:

Acute viral hepatitis is the most common cause of jaundice in pregnancy. HCV and HBV infection do not increase the risk of obstetric complications and do not influence the fetal-neonatal status at delivery, but the pregnancy evolution may be complicated by the onset of cholestatsis in the 2nd and 3rd trimester[5, 7].

In epidemiologic studies done primarily in Europe and in the United States, antibody to hepatitis C has been present in approximately 1% to 4% of pregnant women, 22,000 pregnant women in the U.S. are infected with HBV and can transmit it to their newborns[8]. In our study about 17.5% of the pregnant patients were positive for viral markers of HBV and HCV or both. The study does not reflect the true prevalence of the problem because the magnitude of the problem is wider than that as the population can not seek medical advice and can not be screened.

The high prevalence in the group of pregnant women studied can possibly be attributed to the fact that most of them came from the rural areas where, they are exposed to the primary sources of infection such as transfusion of blood or blood products from unscreened donors; transfusion of blood products that have not undergone viral inactivation; parenteral exposure to blood through the use of contaminated or inadequately sterilized instruments and needles used in medical and dental procedures; the use of unsterilized objects for rituals (e.g. circumcision, scarification), traditional medicine (e.g. blood-letting) or

other activities that break the skin (e.g. tattooing, ear or body-piercing); and intravenous drug use. Household or sexual contacts of HCV-infected persons are marginally at risk[9]. Health care providers had predominantly curative medical orientation, while the unmet health demands in Pakistan needed predominantly a preventive medical approach, there is a dearth of reliable health information, there is no pyramid-shaped administrative and clinical referral system, and the numbers of people who are adequately trained in health education are insufficient to meet demands.

The relevance of HCV and HBV infection to maternal fetal medicine is the high risk of vertical transmission. The risk of hepatitis B virus transmission to the fetus is proportional to maternal hepatitis B virus DNA, as reflected in hepatitis B antigen (HBeAg) and antibody (HBeAg) status. The risk of hepatitis B virus vertical transmission is 10 percent in mothers with negative HBeAg and 90 percent in those with positive HBeAg. Rates of vertical transmission of HCV are about 6% in women with HCV alone and 15% in women co-infected with HIV[10].

The course of pregnancy is not affected by HCV and HBV infection and pregnancy does not detoriate the infections in most of the cases. Universal screening of pregnant women for HBsAg is now performed to reduce perinatal transmission of hepatitis B virus[7]. Infants of HBsAg-positive mothers should receive hepatitis B immune globulin immunoprophylaxis at birth and hepatitis B vaccine at one week, one month and six months after birth. This regimen reduces the incidence of hepatitis B virus vertical transmission to zero to 3 percent. Patients with risk factors for hepatitis C virus infection, such as intravenous drug use or other parenteral exposures, should undergo screening for hepatitis C virus infection before pregnancy. Antenatal screening for HCV infection needs to be proposed to women with risk factors.

Preventive measures includes safe blood-banking practices, immunization against HBV, prompt identification of infected individuals, awareness of the potential for perinatal transmission, implementation of safe-injection practices, linkage of drug users to drug treatment programs, and implementation of community-based education and support programs to modify risk behavior[11]. Vaccination against the hepatitis B virus is safe and works well to prevent the disease. The vaccine is recommended for all children younger than 19 years[12] . It is given as part of their normal vaccination series since birth in EPI schedule in Pakistan. Right now, there is no vaccine for the prevention of HCV transmission. The best means of preventing transmission of HCV is to prevent contact with infected blood and organs and to avoid high-risk sexual behavior such as multiple partners and anal contact[7]. Avoid handling anything that may have the blood of an infected person on it, such as razors, scissors, toothbrushes, nail clippers or files, tampons or sanitary napkins, don' t share drug needles, cocaine straws and practice safe sex..

Conclusion:

This small hospital based study shows that HBV and HCV infections is quiet frequently seen in women of reproductive age however it does not adversely affect pregnancy outcome and pregnancy does not induce any detoriation of liver disease. In a developing country like Pakistan it is an urgent need of the hour to create awareness amongst masses about safe sex, hazards of blood transfusion and I/v drug use. Information regarding incidence, prevalence and disease course of hepatitis and pregnancy still needs a lot of work.

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