Hepatitis C in Pregnancy

GEBELİKTE HEPATIT C

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Summary

Objective: To research the recent literature about HCV and its effects on pregnancy.

Result: Hepatitis B virus has been long known as the leading causative agent of the chronic hepatocellular disease. With demonstrating of HCV using molecular cloning techniques more attention has been taken to hepatitis C virus since HCV is the most encountered agent of the patients with chronic hepatocellular disease recently.

Key Words: Hepatitis C virus, Pregnancy

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Diagnosis and Prevalence

Acute hepatitis C manifests itself as a mild, often subclinical infection within 6-9 months of viral exposure. Presenting prodromal symptoms are more frequently systemic and nonspecific such as nausea, vomiting, low grade fever, coryza, right upper quadrant pain, arthralgia, loss of appetite, fatigue and mild weight loss in some patients. Jaundice may not always accompany other symptoms. The episodically elevated transaminases is diagnostic for HCV infection and can not be observed in other forms of viral hepatitis. Prothrombin time is generally not changed and if found to be prolonged then could be accepted as predictive of serious hepatocellular necrosis. With resolving acute infection aminotransferase levels usually return to normal values. It should be taken into account that the bilirubin levels remaining unchanged over 20 mg/dl is also accepted as predictive of severe disease.

Before the availability of reliable specific serologic tests for HCV, the diagnosis could be made...
Table 1. Risk factors and prevalence of HCV (12)

<table>
<thead>
<tr>
<th>risk factor</th>
<th>prevalence</th>
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<tbody>
<tr>
<td>parenteral substance abuse</td>
<td>21-42%</td>
</tr>
<tr>
<td>blood transfusion</td>
<td>6-17%</td>
</tr>
<tr>
<td>multiple sexual partners</td>
<td>6%</td>
</tr>
<tr>
<td>no identifiable risk factor</td>
<td>40-50%</td>
</tr>
</tbody>
</table>

after exclusion of hepatitis A and B in patients with compatible history of hepatitis infection. Anti HCV specific antibodies appear within 3-5 months of the viral exposure. Even after the presence of specific serologic tests since serum levels of anti HCV antibodies can fluctuate, the diagnosis of hepatitis C could not always be made. In addition the detection rate of antibodies in acute infection is only 50 % (3) and does not differentiate between past and current infection. Considering these, the clinical significance of detecting anti HCV antibodies in acute phase is of limited value.

Though first generation ELISA lacks specificity and sensitivity, most of the authors recommend for repeating the results taken by first generation ELISA, using "recombinant immunoblot assay (RIBA)" and second generation ELISA. Furthermore also with second generation ELISA, when results is repeated it will have a false positivity rate of 50 % (4). The prevalence of HCV was reported to be 0.4-0.8% in volunteer blood donors. Because high risk groups are prevented from donating, this probably reflects an underestimated rate. This result is also confirmed in the study of Liddle and colleagues reporting the rate in Australia to be 0.3% (5). Nevertheless in a prospective study conducted by Marcellin and associates in an unselected population (pregnant women) the prevalence is reported as 3.9% with second generation ELISA (this rate dropped 2% with RIBA) (6).

In another study by Reinus et all from New York it's reported as 4.5% in HIV (-) pregnant women. In patients with positive anti HCV antibody results, using PCR technology the HCV RNA is detected by 26-92% (8-9).

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### Vertical Transmission of Hepatitis C Infection

Transmission routes of HCV is mostly similar to that of hepatitis B. Predominant risk factors include parenteral drug use, exposure to blood and its products, tattoo, having multiple sexual partners, being health care provider. Recently it has taken attention that the prevalence of HCV is rather high in iv drug users. It has been also reported that it can be as high as 90% in individuals with regular parenteral substance abusing (5). Sexual transmission rate of HCV is reported as approximately 5% (5). HCV nucleotide sequences have been demonstrated in viral isolates from sexual partners of HCV positive patients (10). According to the size of injury, transmission could occur about 5-15% in one needle stick (11). Even there couldn't be found any risk factor in as high as 50% of patients known to be infected by HCV, and in 25-50% of pregnant women, the most encountered risk factor is iv drug use in pregnant women.

Even if HCV transmits vertically, unlike hepatitis B and HIV infections it's transmission rate is not as high as reported earlier (45-67%) (5,13), and is not observed frequently in uncomplicated otherwise normal pregnancies (14). Studies from Europe reports a 50% rate, but it is much more in Japan. In a study conducted by Chang and colleagues vertical transmission rate of HCV is reported to be 0-15% (average 4.7%) (13). The most important factors influencing HCV transmission are circulating maternal viral titers and coinfection status with HIV. Currently it is known that low maternal circulating viral titers is linked to the low perinatal transmission rate. In addition it is observed that, in patients with concomitant HIV infection HCV transmission is higher. It is assumed that HIV does it by facilitating HCV replication.

While in patients having low HCV RNA titers no transmission is observed, the highest transmis-
sion rate is reported in patients having >1 million copies / ml (15). Furthermore as the transmission rate is reported to be 0-18% in HIV (-) patients, HIV (+) mothers transmit HCV as a high rate of 6-36%. Chang and associates proved high transmission rates of 39% in patients either having concomitant HIV infection or in those having high maternal circulating viral HCV RNA titters (>1 million HCV RNA copies/ml) (13).

Even if low titers of HCV RNA was detected in colostrum, it could not have been proved that HCV transmission occurs via breast feeding (16,17). In addition it is suggested that the titters of RNA levels in colostrum is not correlated with those in maternal serum (17). Also a study reports that cesarean section could reduce the transmission rate, it hasn't been confirmed by other investigators (18). Today it's not a routinely accepted concept to perform cesarean section in order to lower the transmission rate and currently there is not any effective way to prevent transmission.

Effects on Pregnancy and Treatment

As in non pregnant women the treatment is mainly supportive. Nausea, vomiting, prolonged difficulty of oral intake can induce premature uterine contractions by causing dehydration. It is wise to hospitalize these patients , provide sufficient hydration and monitorize for premature contractions. Patients must be encouraged about that it is not teratogenic, does not cause any kind of anomaly and not increase obstetric complications (19,20).

It’s known that interferon a2b treatment is effective in mild and moderate forms of diseases but not in those with cirrhosis (21). Besides, this treatment modality is not recommended in pregnant women. There is no vaccine available for HCV and pre-exposure prophylaxis and post-exposure immune globulin use are not beneficial. Most experts are not optimistic that a vaccine will be developed in the next 10 years because of the subgroup diversity and frequent mutations.

Neonatal immunoprophlaxis doesn’t seem to be available for neonates born from HIV (+) mothers currently (22).

REFERENCES


