

The Incidence of HBSAg, Anti-HBS and Anti-HCV in Pregnant Women

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Abstract

Objective: The proportion of infection in babies born from hepatitis B early antigen positive mothers is 60-90% and if they are not treated more than 90% of them will be chronic hepatitis B carriers and this brings the risk for chronic hepatitis and hepatocellular cancer. We tried to find out the proportion of the pregnant women with HbsAg (surface antigen of hepatitis B), anti-HBs (antibody against hepatitis B surface antigen) and anti-HCV (antibody of hepatitis C).

Methods: In this study, 795 pregnant women are evaluated retrospectively for HbsAg, anti-HBs and anti-HCV in Taksim Training and Research Hospital, Clinics of Obstetrics and Gynecology between October and December 2010. The percentages are determined.

Results: None of the parameters like age, week of gestation and social or economical status were criteria for the pregnant women taken into the study. 29 of the 795 pregnant women (3.65%) were HbsAg positive, 69 of them (8.68%) were anti-HBs positive and 6 of them (0.75%) were anti-HCV positive. These findings of our study is correlated the results of other studies in our country.

Conclusion: It has been necessary to make serological tests for hepatitis B routinely for the protection and treatment of the newborn. All of the pregnant women should be informed. Also after the screening tests for hepatitis B, vaccination before the conception should be done. Our country is involved by the vaccination program in 1998. Although low percentage of spread, the screening of hepatitis C infection in risk groups is important for community and newborn health. The results of our study is correlated with the statistics of these study of our country.

Keywords: Pregnancy, hepatitis B, hepatitis C.

Gebelerde HBSAg, anti-HBS ve anti-HCV sıklığı

Amaç: Hepatit B virüsü ile enfekte annelerden doğan bebeklerin enfeksiyon oranı annenin hepatit B early antijen (HbeAg) pozitif olması durumunda %60-90'a çıkmaktadır ve tedavi edilmedikleri takdirde %90'ından fazlası kronik HBV (hepatit B virüsü) taşıyıcısı olmaktadır ki bu da hayatlarının ilerleyen dönemlerinde kronik hepatit ve hepatosellüler karsinom riskini beraberinde getirir. Biz bu çalışmada hastanemize başvuran gebelerde HBSAg (hepatit B yüzey antijeni), anti-HBs (hepatit B yüzey antijenine karşı antikor) ve anti-HCV (hepatit C virüs antikoru) pozitiflik oranını saptamayı amaçladık.

Yöntem: Bu çalışmaya 01 Ekim-31 Aralık 2010 tarihleri arasında Taksim Eğitim ve Araştırma Hastanesi Gebe Polikliniği'ne başvuran 795 gebe alındı. Gebelerin HBSAg, anti HBs ve anti-HCV değerleri retrospektif olarak incelendi. Hastalarda bulunan pozitif değerler olgu sayısı ve yüzdelik değerler olarak hesaplandı.

Bulgular: Yaş, gebelik haftası ve sosyoekonomik durumlara bakılmaksızın çalışmaya alınan 795 gebenin 29'u (%3.65) HBSAg pozitif, 69'u (%8.68) anti HBs pozitif ve 6'sı (%0.75) anti-HCV pozitif idi. Bu çalışmada bulduğumuz değerler, ülkemizde gebelerde tespit edilmiş olan pozitiflik oranları ile benzerdir.

Sonuç: Gebe takibinde rutin olarak hepatit B için serolojik tarama yapılması yenidoğanların enfeksiyondan korunma ve tedavi edilmesi için gereklidir. Gebeler bu konuda bilgilendirilmelidir. Hepatit B için gerekli taramalar yapıldıktan sonra prekonsepsiyonel dönemde aşılama yapılmalıdır. Ülkemiz aşılama programına 1998 yılında dahil olmuştur. Hepatit C'nin bulaş oranı düşük olmasına karşın hastalık seyri ve sonuçları açısından özellikle riskli gruplarda taranması toplum ve yenidoğan sağlığı açısından önemlidir. Hastanemizde yaptığımız bu çalışmanın sonuçlarına göre hastanemize başvuran gebelerin seropozitiflik oranları ülkemiz istatistikleri ile örtüşmektedir.

Anahtar Sözcükler: Gebelik, hepatit B, hepatit C.

Introduction

The infections with the virus of Hepatitis B (HBV) and C (HCV) take place among the most important health issues both in our country and in the world and they are the most common cause of the cirrhosis and the hepatocellular carcinoma.^[1] There are lots of ways for contamination, one of them is the vertical transmission from mother to newborn. The transmission from infected mother to her baby is actualizes in labor, after labor or rarely in pregnancy. The 70-90% of babies born from infected mothers positive for HbeAg are infected and 90% of them have chronic infection. The 10-40% of babies born from mothers negative for HbeAg are infected and 40-70% of them have chronic infection.^[2] Over the 90% of babies born from mothers infected with HBV can be protected by immunization.^[3] However the risk for perinatal transmission of HCV is lower than 5% and there is not any special suggestion for protection.^[4] According to all these information it is clearly important to determine the immunization for Hepatitis B in all pregnant women and hepatitis C infection in risky pregnant. HBV carrier pregnant should be determined and the newborn should have prophylaxy. Hepatitis B vaccine and Hepatitis B hiperimmunoglobuline (HBIG) should be applied to the newborns of Hepatitis B infected mothers. If the mother is negative for HbeAg, in the case of absence of HBIG, the vaccine only itself is highly protective enough.^[5] The transmission of HBV, from mother to baby, becomes usually in the third trimester. If the acute infection occurs in first or second trimester the studies report that the transmission does not exist.^[6] In this

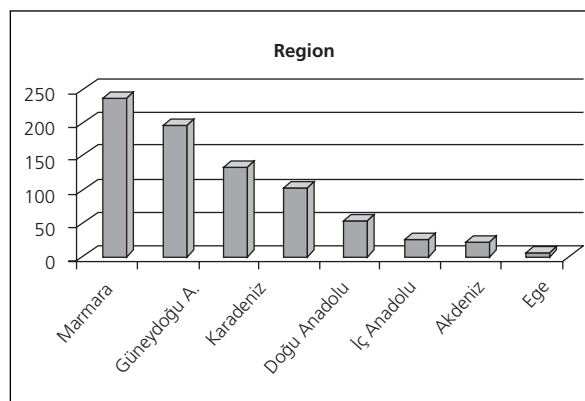
study we tried to find out the proportion of the pregnant women with HbsAg, anti-HBs and anti-HCV (antibody of Hepatitis C).

Method

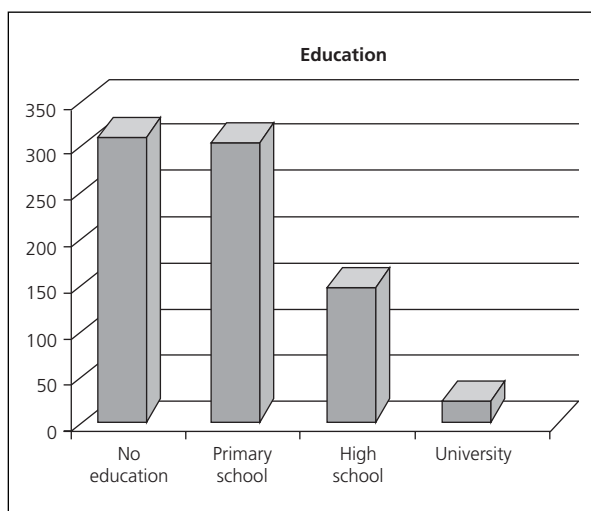
In this study, 795 pregnant women are evaluated retrospectively for HbsAg, anti-HBs and anti-HCV in Taksim Training and Research Hospital, Clinics of Obstetrics and Gynecology between October and December 2010. The samples are tested with Tritrus system microparticle enzyme immunassay in our hospital and GBC kit is used for HBsAg and AntiHBs, Murex kit is used for Anti-HCV. The positivity edge of HBsAg and anti-HCV was taken as 1 IU/ml, 10 IU/ml is taken for AntiHBs. The number of the cases and percentages of them are determined. Also age, education, occupation, living area and gestational age are recorded.

Results

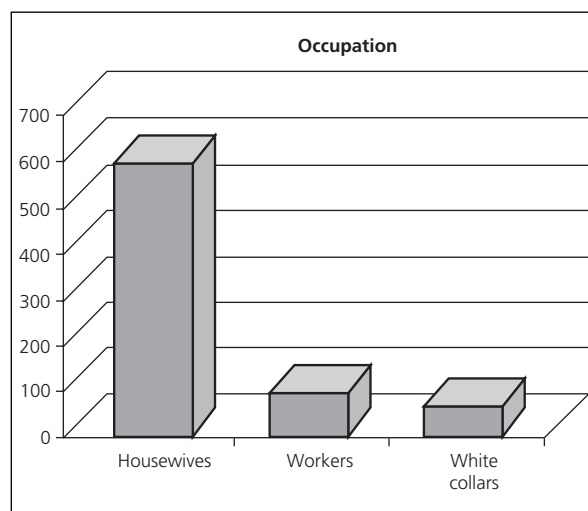
The mean age is found as 28.35 ± 6.18 and gestational age is found as 30.84 ± 2.3 . The living regions are as following; 29.7% (236 pregnant) Marmara, 25% (199 pregnant) Southeast Anatolia, 16.9% (135 pregnant) Black Sea, 14% (111 pregnant) Eastern Anatolia, 7.4% (59 pregnant) Central Anatolia, 3.4% (27 pregnant) Mediterranean, 2.8% (22 pregnant) Aegean and %0.8 (6 pregnant) were foreigner. The distribution according to the regions is shown in the Graphic 1. The educational distribution is as following; 39.25% (312) primary school, 18.11 % (144) high school, 3.14% (25) university and 39.5% (314) do not have any educa-



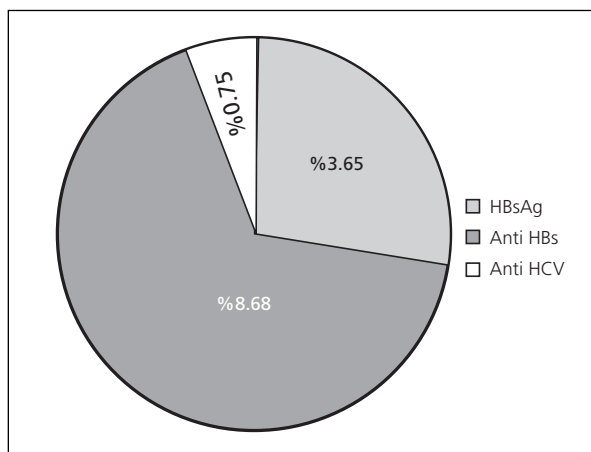
Graphic 1. Distribution according to regions.



Graphic 2. Pregnants according to education.



Graphic 3. Distribution of pregnant women according to occupation.



Graphic 4. Distribution of HBsAg, Anti HBs and Anti HCV positivity.

tion. It is shown in Graphic 2. 76.98% (612) of the pregnant women are housewives, 13.46% (107) are workers, 9.56% (76) are white-collars. It is shown in Graphic 3. In the study group, 29 of the pregnant women (3.65%) are HBsAg positive, 69 of them (8.68%) are anti HBs positive and 6 of them (0.75%) are found to be anti-HCV positive. The distribution of seropositivity is shown in Graphic 4.

Discussion

The infections caused by HBV and HCV causes acute and chronic hepatitis, cirrhosis and hepatocellular carcinoma. Also these infections are the important causes of morbidity and mortality and

also seen more common both in our country and in the world. Both of the viruses have many ways of transmission and one of these is the vertical transmission from mother to newborn. The transmission from the infected mother to baby is rarely during the pregnancy or during and after the delivery. Along the vaginal discharge swallowing the mother's blood, contact during the cesarean section and the transmission of the maternal blood to fetal circulation because of placental damage can result with transmission of the infection. The 70-90 % of babies born from infected mothers positive for HbeAg are infected and 90% of them have chronic infection. The 10-40% of babies born from mothers negative for HbeAg are infected and 40-70% of them have chronic infection.^[2] Over the 90% of babies born from mothers infected with Hepatitis B virus are protected by immunization.^[3] HBV vaccination is done in many countries of the world since 1991 with the suggestion of World Health Organization (WHO). In our country the vaccination is done routinely since 1998. It should be established how to follow up the pregnant women infected with hepatitis according to the prevalence of the disease.

The percentages of the hepatitis carriage differ in countries; it is 11.6% in Nigeria, 10% in Hong Kong, 0.44% in Holland and 1.4% in Germany.^[7,8] In our country HBV carriage differs among regions and our country is accepted as one of the middle endemic countries in the world. In the studies, the

percentage of the HBsAg positivity is reported between 2.1% - 16.6%.^[9,10] Aslan and colleagues reported 4.66% positivity among 450 pregnant, Anti-HBs percentage was 21.1%; Madendağ and colleagues found the HBsAg positivity as 2.11%.^[11,12] In the study that is made by Gül and colleagues, HBsAg positivity is 4.08%, Anti-HBs positivity is 18.6%.^[6] In our study, we found HBsAg positivity as 3.65% and Anti-HBs positivity as 8.68%. HBsAg positivity of our study is concordant with the literature but Anti-HBs percentage is lower than the other studies. In our country that places in the mean endemic countries, the most effective way to break down the transmission chain is to screen the pregnant for HBsAg and to apply Hepatitis vaccine and HBIG to all newborns of the mothers carry HBsAg. One of the importance of the establishment of carriage is to determine all of the members of the family under risk and immunize them if necessary.

The percentage of HCV positivity is reported as 0.44% and 2.04%. A study made in Van reports this as 2.04% and a study in Ankara reports as 0.17%. This is 0.75% in our study. Our result is like the medium of our country. Hepatitis C has also a vertical transition but infection rate is much lower than hepatitis B. Maternal antibodies pass from mothers to babies passively and disappear in six months. Because of this reason the positive HCV-RNA is more meaningful than Anti-HCV in diagnosis of vertical transmission. It is recommended to detect HCV-RNA in maternal serum for vertical passing and it is not recommended detecting Anti-HCV routinely. It should be investigated for under risk of HCV infection in settings of blood transfusion, positivity of HIV infection and chronic hemodialysis. HCV and HIV co-infection increases the perinatal transmission rate. In Australia 125 of 131 drug addicted pregnant have been reported as anti-HCV positive.^[13] In United Kingdom this is found as 0.19% and 1.9% in Italy.^[14,15] HCV is commonly positive especially with the risk factors like as drug addiction, blood transfusion and HIV positivity.^[16]

Conclusion

The screening of hepatitis B is needed routinely for protection and diagnosis of newborn. The pregnant should be informed for this situation.

The vaccination programme which our country was introduced in 1998 should be done in pre-conceptional period after screening of hepatitis B infection. Although low risk of spread, the screening of HCV infection in risk groups is very important for community and newborn health. According to results of our study, the percentage of seropositivity pregnancy admitted to our hospital are correlated with statistical results of our country. As a result for protection of newborns, we suggest that it is necessary to screen all pregnant for hepatitis B and the pregnant for hepatitis C who have risk factors.

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