

LETTERS TO THE EDITOR

Hepatitis B markers and vaccination-induced protection rate among Albanian pregnant women in Greece

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Abstract

Hepatitis B has long been a serious public health problem both in Greece and in Albania. In the February 2009 issue of *World Journal of Gastroenterology*, Resuli *et al* presented the interesting epidemiological data concerning hepatitis B virus infection in Albania. The results of this study were discussed and several data from our similar research were provided.

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TO THE EDITOR

In the February 2009 issue of *World Journal of Gastroenterology*,

Resuli *et al*^[1] presented the interesting epidemiological data concerning hepatitis B virus (HBV) infection in Albania. The authors studied the positive hepatitis B surface antigen (HBsAg) and antibody to hepatitis B surface antigen (anti-HBs) among 3880 unvaccinated residents in rural and metropolitan areas of Albania. In the entire study population, the prevalence of HBsAg and anti-HBs was 9.5% and 28.7%, respectively, demonstrating that despite the estimated two-fold reduction of HBsAg prevalence in the general population, Albania remains a highly endemic country.

It is well known that vertical (mother-to-infant) transmission of HBV infection occurs mostly during the perinatal period and is responsible for the majority of the disease burden in endemic areas. The risk of vertical transmission generally depends on the level of maternal infectivity, particularly on the presence of hepatitis B e-antigen (HBeAg) and HBV DNA level^[2]. In the study by Resuli *et al*^[1], 7.3% of the pregnant women (mean age 27.4 years) were chronically infected with HBV and 36.3% were positive for antiHBs. Despite the absence of serological data about the antiHBc status, it seems that more than 40% of the Albanian pregnant women studied have been exposed to HBV (taking into consideration a proportion of women with isolated anti-HBc seropositivity).

Hepatitis B has long been a serious public health problem in Greece also. Historically, Greece used to have the highest burden of HBV infection in the European Union. An early hepatitis B prevention program introduced in 1982, targeting mainly the high-risk groups, did not significantly impact the disease incidence and prevalence. More recent universal HBV mass vaccination programs launched in the past decade have proved to be the key measure in decreasing the disease burden, as well as demographic and socioeconomic changes, safer medical and nursing practices, and finally, screening of the blood donors have significantly declined the chronic HBV infection in our country^[3]. However, a substantial intromission of refugees, especially descending from countries, endemic for HBV infection (mainly from Albania), is likely to have influenced this trend.

In a study conducted between September 2008 and June 2009 in the Maternal and Perinatal Hospital of Athens "Elena Venizelou", we evaluated the current prevalence of HBV serological markers in a multinational population of pregnant women, residing in Greece. A

total of 1333 pregnant women (mean age 28.5 years) who delivered at the Departments of Obstetric and Gynaecology of the Hospital were prospectively evaluated. HBsAg, HBeAg, antibody to hepatitis B e-antigen (anti-HBe), antibody to hepatitis B core antigen (anti-HBc) and anti-HBs were detected by commercially available routine enzyme immunoassays (Abbott Laboratories, Abbott Park, Illinois, US). All women of the study population were screened for HBsAg, anti-HBc and anti-HBs, whereas HBeAg and anti-HBe were evaluated only in those who were positive for HBsAg. The mean difference between two groups was evaluated by Student's *t*-test after the equality of variances was controlled with the Levene's statistic, while one-way analysis of variance (ANOVA) was used to assess the differences in continuous variables among more than two study groups.

More than half of the study population had Greek origin (756/1333, 56.7%), 30.6% were descendents from Albania (408/1333) and 12.7% (169/1333) from Eastern European countries (Russia, Romania, Bulgaria). Overall, 4.4% (58/1333) of the women were HBsAg (+) and the vast majority of them (45/58, 77.58%) were Albanians. Among the Albanian women, the prevalence of HBsAg was 11% followed by 2.4% among the women from Eastern European countries. The prevalence of HBsAg among the Greek women (1.2%) was very low and significantly lower than the mean value of the non-Greek population studied (7.4%, $P < 0.001$). More than half (52%) of the Albanian women exhibited seropositive anti-HBc followed by Eastern European women (22.5%), whereas only 6.5% of the Greek women had serological markers compatible with previous HBV exposure. Moreover, serological markers of past HBV infection with spontaneous

recovery [antiHBc (+) and antiHBs (+)] were observed in 13.9% of the whole study population. Among the Greek women, only 3.6% exhibited serological markers of spontaneous recovery from HBV infection in contrast to 32.7% among the Albanian women and 14.8% among the Eastern European women ($P < 0.001$ in all cases). Interestingly, only 33.8% of the Greek women and 40.3% of the Albanian women ($P = 0.15$) exhibited vaccination-induced protection against HBV infection, characterised by the presence of positive isolated antiHBs.

Our data are in accordance with those presented by Resuli *et al*¹¹, supporting that HBV infection is endemic among Albanian pregnant women. However, it seems that the awareness of Albanian immigrants, who live and work in Greece, about the control of HBV infection, is rising steadily, as supported by the comparable vaccination-induced protection rates among the Greek and Albanian pregnant women observed in our study. The relatively low vaccination-induced protection rates observed suggest that more intense surveillance and immunisation programs, targeting pregnant women, are necessary to avoid vertical transmission of HBV infection.

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