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Decreasing the hepatitis B burden in Tunisia need more attention to adults for vaccination

The authors reply:

We thank Dr Alavian for his interest in our paper [1]. This is our response:

Throughout our study, we took antibody against hepatitis B surface antigen (anti-HBs) to be the marker of immunity. Seropositivity was defined as anti-HBs antibody concentrations $\geqslant 2$ mIU/ml (The cut-off of used testing assay), whereas subjects with non-measurable levels of antibody or anti-HBs antibody concentrations <2 mIU/ml were considered as seronegative. On the other hand, seroprotection were defined as anti-HBs antibody concentrations $\geqslant 10$ mIU/ml, while the samples showing the anti-HBs titer level below 10 IU/ml were considered non-protective. The frequency distribution of the hepatitis B virus (HBV) markers was given in Table 1.

In order to assess any trends for vaccination séroprotection in our study participants, the rate of protective anti-HBs and geometric mean titre (GMT) values were assessed and stratified according to age. The rate of protective anti-HBs and GMT values (level of anti-HBs <10, between 10 and 100 and more than 100) were assessed and stratified according to age as reported in Figure 3. Our survey showed a linear decline of seroprotection rates with increasing age, reflecting waning of protective anti-HBs over time. This result was consistent with a series of studies reported from several countries with different transmission routes of HBV, vertical [2] and horizontal transmission [3]. Furthermore, we believe that waning of seroprotection is not connected to transmission routes.

In comparing results of the sero-epidemiological survey of HBV markers conducted in Tunisia before and after implementation of the universal vaccine program, a dramatic decline was observed in HBV infection in all the children's age, even in those who were not vaccinated during infancy. In a previous survey, conducted before vaccination program, the overall seroprevalence of hepatitis B surface antigen (HBsAg) range from 5·3% to 7·8% [4, 5]. These studies suggested that horizontal route was the predominant mode of HBV transmission, and HBV infection had already occurred before age 20 years. On the other hand, results of a new national investigation conducted in Tunisia in 2016 (unpublished data), showed that the mean prevalence rate of HBsAg in the general population was 1·8%. HBsAg seroprevalence was 0·1% in infants under 5 years old and increased with age till 20 years and then more slowly in adulthood, with a seroprevalence about 2% for people aged over 20 years (unvaccinated persons). We believe that decrease of HBV infection even in unvaccinated persons (people aged over 20 years) is related to the decrease of the HBV spread in the area since introduction of universal vaccination which reduces the risk of contagion chain for those unvaccinated. Thus, continuation of HBV immunization should prevent HBV infection in children and subsequently, in adults. Therefore, vaccination of healthy adults in Tunisia seems unnecessary. However, catch-up immunization strategies targeted at unvaccinated people in specific groups with highest risk factors for acquiring HBV infection might be needed. In Tunisia, studies conducted in polytransfused and hemophiliacs persons, showed an HBsAg prevalence of 8·4% and 7·1%, respectively [6, 7]. Catch-up immunization strategies and other prevention efforts may be targeted at these groups.

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