J Compr Ped.2012;3(1):1-2. DOI: 10.17795/compreped-4058

Comprehensive Pediatrics

www.ComprPed.com

Hepatitis B Virus Infection; A Vanishing Disease in Iranian Children

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ARTICLE INFO

Article type:
Editorial

Article history:
Received: 02 Jan 2012
Revised: 04 Jan 2012
Accepted: 06 Jan 2012

Keywords:
Iran
Hepatitis B Virus
Child
Liver Diseases

Implication for health policy/practice/research/medical education:
Epidemiology of Hepatitis B has changed and the doctors and health policy makers should understand it.

Please cite this paper as:
Alavian SM, Lankarani KB. Hepatitis B Virus Infection; A Vanishing Disease in Iranian Children. *J Compr Ped*. 2012;3(1):1-2. DOI: 10.17795/compreped-4058

Hepatitis B virus (HBV) infection is the main cause of chronic liver disease (1) and at least 2 billion people are infected worldwide, while 350 million are chronic HBV carriers (1). The prevalence rate of HBV infection differs in various countries. In areas with a high prevalence (8% or more), the lifetime risk of exposure to the infection is around 60% and it typically occurs in infancy or childhood periods. China, South-East Asia, most of Africa and some parts of the Middle East have a high prevalence of HBV infection and the rate ranges from 8% to 15% (1, 2). Intermediate prevalence areas (2-7%) of infection occur across all age groups and most areas of Middle East countries, Eastern and Southern parts of Europe are in this category. There are also areas with low endemicity, i.e. lower than 2% prevalence in adults. These areas include North America and Western Europe (1).

HBV infection is still the main cause of chronic liver disease in Iran (3), although the seroprevalence of HBV infection in Iran has decreased during the last two decades (4). The main risk factor for HBV transmission was previously related to maternal-infantile transmission and high coverage infantile vaccination is the main cause for changes in the epidemiology of HBV infection (5). Given the importance of this interruption to HBV transmission in Iran, the HBV vaccination has been included in the extended program of immunization (EPI) since 1993 (6, 7).

Adibi *et al.* showed that national vaccination has decreased the rate of HBV infection in mothers with HBsAg positive to around 85.7% and this means that the national vaccination of all infants has decreased the burden of infection by more than 85% in our community (7). Fortunately the prevalence of HBV infection was zero in non-exposed infants (7). This study provided enough data to show that the HBV vaccination alone significantly decreased the rate of transmission of HBV infection from infected mothers to their infants, but it was not adequate. This study forced us to see the necessity of implementing maternal screening for HBV infection, and to add hepatitis B immunoglobulin (HBIG) to the HBV vaccination programs (8).

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DOI: 10.17795/compreped-4058

Kabir *et al*. demonstrated that adding HBIG to standard HBV vaccination given to the infants of infected mothers significantly decreased the HBV infection rate in this high risk group (6). The prevalence of HBsAg positivity was 3.6% in the infants of infected mothers who received HBIG and HBV vaccine simultaneously (6). The addition of HBIG to recombinant vaccine will significantly increase protection against HBV infection compared to HB vaccine alone. Maternal screening for HBV infection and adding the HBIG to standard care in maternity departments needs to be mandatory.

The implementation of universal hepatitis vaccination for infants in the majority of countries has lowered the prevalence of HBV over the past decades. Unfortunately not all countries have integrated HBV vaccination of infants into their programs, while around 171 countries which has been estimated to contain nearly 65% of the world's population use it (1). In Iran around 97% of all infants receive the HBV vaccine in the early infantile period (5).

Iran has an intermediate to low endemicity for HBV infection now and it is estimated that the prevalence of HBV infection will decrease in the near future and so it seems that the HBV infection has now vanished in Iranian children (3, 9). The risk factors for acquiring a HBV infection have changed from vertical or early childhood to adolescents and the Ministry of Health and Medical Education (MOHME) has implemented a mass HBV vaccination campaign for adolescents who were born from 1989 to 1992 with a coverage of about 75% to obtain better infection control in Iran (10).

Financial Disclosure

None declared.

Author's Contribution

None declared.

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