

## The response rate to hepatitis B vaccine in under one-year children in Gorgan, Iran

Abdolvahhab Moradi (PhD)\*<sup>1</sup>, Behnaz Khodabakhshi (MD)<sup>2</sup>, Ezzatollah Ghaemi (PhD)<sup>3</sup>  
Azad Reza Mansourian (PhD)<sup>4</sup>, Abdoljalil Sarikhani (BAc)<sup>5</sup>, Mohsen Saeidi (MSc)<sup>6</sup>

<sup>1</sup>Associate Professor, Department of Virology, Gorgan University of Medical Sciences, Gorgan, Iran.

<sup>2</sup>Associate Professor, Department of Infection Disease, Gorgan University of Medical Sciences, Gorgan, Iran.

<sup>3</sup>Associate Professor, Department of Microbiology, Gorgan University of Medical Sciences, Gorgan, Iran.

<sup>4</sup>Associate Professor, Department of Biochemistry, Gorgan University of Medical Sciences, Gorgan, Iran.

<sup>5</sup>Department of Microbiology, Gorgan University of Medical Sciences, Gorgan, Iran.

<sup>6</sup>Academic Instructor, Department of Immunology, Gorgan University of Medical Sciences, Gorgan, Iran.

---

### Abstract

**Background & Objective:** Vaccination is one of the most effective ways in preventing the hepatitis B virus. This study was done to evaluate the response rate to hepatitis B vaccine in under one-year children in Gorgan, Iran.

**Materials & Methods:** This cross-sectional descriptive study was carried out on 215, children of 7-12 month of age (55.3% male, 44.7% female), in Gorgan, northern Iran during 2006. These subjects already had received the three-time vaccination against hepatitis B. Anti-HBs, Anti-HBc and HBsAg level of these children serum were determined, using ELISA technique.

**Results:** In 30 (14%) subject's serum, there was not detected any antibodies against the viruses. Out of 185 children positive for HBS, 4 cases belong to HBC viruses. As a whole, 86% of the samples, had more than ten international unit of HBS. The mean±SD of the titred antibodies in male and female were 158.84±12 and 187.55±13.83 respectively. The response not to three-times vaccination in male and female were 84% and 89.9% respectively.

**Conclusion:** This study showed that in spite of vaccination, there are cases with virus-contamination. The reasons for absence of any response to the vaccination in some of this children can be due to deficiency in the immune system, improper genetic background which can not be stimulated by that vaccination, inadequate proper conditions for the preservation of vaccine, and the type vaccine used. Also the procedure of vaccine inoculation, the vaccine preservation condition and transportation should be taken into consideration.

**Keywords:** HBs anti-body, Children, Vaccination, Hepatitis B, Gorgan

---

\* Corresponding Author: *Abdolvahhab Moradi (PhD)*, E-mail : [abmoradi@yahoo.com](mailto:abmoradi@yahoo.com)

Received 12 Dec 2006

Revised 3 Apr 2008

Accepted 8 Apr 2008