



Hepatitis A Virus Seroprevalence in Medical Students in Morocco

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Abstract

Objective: Medical students are commonly exposed to infectious agents, including Hepatitis A Virus (HAV) which may cause morbidity and even deaths. The identification of prevalence is essential for implementing efficacious preventive measures.

This study aimed to determine the seroprevalence of anti-HAV IgG in Moroccan medical students.

Results: Sera from 135 medical students; (69.6%) male and 41 (30.3%) female, were included in the study at Mohammed V Military Teaching Hospital. HAV seropositivity was unexpectedly low (35.5%, n=48).

Conclusion: This is the first prospective seroprevalence study of hepatitis A in Moroccan medical students. The high susceptibility and increased risk of clinical HAV infection identify a need for primary prevention through the administration of vaccination in this group.

Keywords: Hepatitis A; Medical student; Epidemiology; Morocco

Introduction

Hepatitis A Virus (HAV) has a worldwide distribution and, like other enterically transmitted infectious diseases, its occurrence is strongly related to levels of socioeconomic development and standards of hygiene. This infection can easily spread by person-to-person contact [1]. Studies from the 1980s showed nearly universal immunity in Morocco. More recent data shows that, in general, urban areas have experienced a decline in hepatitis A infection, while rates in rural areas remain high and the prevalence is generally lower in higher social classes [2]. HAV infection could be prevented by immunization. Despite the availability of a very effective and safe vaccine, prevention of HAV infection is still not on the health agenda of most developing countries based on the assumption that most individuals acquire natural immunity at an early age [3].

In Morocco, there are very few reports on prevalence of HAV infection. Earlier survey in our country indicated that HAV is endemic in Morocco, with 97.7% of the adult population having positive anti-HAV [2]. However, data collected a recent study demonstrated lower rates of infection among children [4].

There are some data in Morocco suggesting that there has been an increase in the reported clinical cases of acute hepatitis A infection among young adults in recent years. This has raised a question about whether or not there has been a shifting epidemiology of HAV.

Our study aimed to determine the seroprevalence of anti-HAV IgG in medical students in Morocco.

Materials and Methods

This study was performed between September 2023 and November 2023 in medical students of Mohammed V Military Teaching Hospital.

A total of 215 blood samples and demographic information, including gender, age were collected from medical students.

Serum samples were screened for the presence IgG anti-HAV levels using (HAVAB CLIA; Abbott Laboratories, Wiesbaden, Germany), following the manufacturer's instructions.

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Table 1: Seroprevalence of IgG Anti-HAV according to age and sex.

Age, Year	Total no.	Male no.	Seropositive %	Female no.	Seropositive %
19-24	135	94	36.1	41	34.1

IgG: Immunoglobulin G; HAV: Hepatitis A Virus

Data from the study were analyzed using descriptive statistics and presented in terms of percentage.

Results

The mean age of the participants was 21.7 ± 2.2 years (range: 19-24), and female represented only 30%. For IgG anti-HAV antibodies, 48 participants (35.5%) were seropositive. The seropositivity of HAV according to their characteristics is shown in Table 1.

Discussion

This is the first prospective seroprevalence study of hepatitis A in medical students. The results showed a low seroprevalence of HAV (35.5%) in the cohort of medical student in Morocco. One study has been conducted in Morocco during 1974 in young adults (army recruits) and the seropositivity of HAV was 99.7% [7].

This lower prevalence rate in medical students probably reflects higher social, economic and hygienic standards. In fact, is that the rapid improvement of living conditions and sanitation due to economic growth has been associated with a rapid decrease in anti-HAV prevalence. It was reported that the proportion of the population with accessibility to clean water, the value of the human development index and per capita gross domestic product were negatively associated with HAV infection rates [8].

Other similar studies that were performed among medical students of Iran, Turkey and Korea, showed a decrease of seroprevalence of HAV. In Iran, the prevalence of HAV was detected in Isfahan, Hamedan, and Kermanshah newly admitted medical with 67.5%, 79.2%, and 50.6% respectively, indicating than one-third of the medical students in all three faculties were seronegative, which are similar to our finding in Morocco at a university in Turkey, the overall frequency of total anti-HAV seropositivity was 34.9% among healthcare students. Approximately two out of three students were susceptible to HAV infection [6]. In Korea, at Wonkwang University Medical School, most of medical students planning for their clerkship were had no immunity against HAV, only 11.11% of positivity [7].

Medical students are exposed to various types of infectious agents in occupational settings, including HAV. A screening policy

and administration of active vaccination to susceptible students should be seriously considered in high-risk wards, such as pediatric or neonatal intensive care units [8]. However, additional studies on risk assessment for nosocomial HAV in hospitals and a cost-effectiveness analysis of HAV vaccination for medical school students are warranted [5].

Conclusion

The seroprevalence of anti-HAV IgG among Moroccan medical students in 2023 is unexpectedly low. Since HAV infection can become a serious disease, medical students are at high risk for HAV infection. Immunity to vaccine-preventable diseases is very important, especially for medical school students entering their clerkship.

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