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Seroprevalence of Hepatitis A in South African Pediatric Populations with and without HIV

Selabe Blose*

Department of Paediatrics and Child Health, University of Cape Town, Cape Town 7925, South Africa

Introduction

Hepatitis A virus is a major cause of acute viral hepatitis worldwide, particularly in developing countries with suboptimal sanitation and hygiene. Hepatitis A is transmitted primarily through the fecal-oral route, commonly via contaminated food or water. In many regions, including parts of Africa, infection with HAV during childhood is prevalent, leading to the development of immunity in later life. However, the emergence of the HIV epidemic has introduced new dynamics to the epidemiology of various infections, including HAV, particularly in pediatric populations. South Africa, which has a high burden of HIV infection, presents an interesting context for examining the seroprevalence of HAV, especially in pediatric populations. The introduction of antiretroviral therapy has dramatically altered the trajectory of HIV in children, but its impact on susceptibility to and outcomes of other infections, such as HAV, remains an area of active research. This article explores the seroprevalence of hepatitis A in South African pediatric populations, comparing those with HIV to those without, examining factors that influence exposure, immunity, and the potential impact of HIV infection on HAV susceptibility and outcomes. Hepatitis A is an acute viral infection of the liver caused by the HAV, a non-enveloped, single-stranded RNA virus. The infection typically causes mild illness in children but can lead to severe liver disease, including acute liver failure, in adults. Symptoms of hepatitis A include fever, fatigue, loss of appetite, nausea, vomiting, abdominal pain, and jaundice. In most cases, infection resolves without long-term consequences, and lifelong immunity is conferred after recovery [1,2].

Description

HAV infection is primarily transmitted through the ingestion of food or water contaminated by fecal matter from an infected individual. In settings with poor sanitation and hygiene practices, the risk of infection is heightened. In South Africa, hepatitis A is considered endemic, with higher prevalence rates in rural areas and among populations with limited access to clean water and sanitation. According to a study by the South African National Health Laboratory Service, seroprevalence of HAV in children is relatively high, reflecting early childhood exposure to the virus. However, the rates of infection and immunity vary across different regions and population groups. Socioeconomic factors, sanitation, and healthcare access are key determinants of the seroprevalence of HAV. The country has one of the highest rates of pediatric HIV infection globally, with approximately 350,000 children living with HIV, and HIV remains the leading cause of death among South African children. Children living with HIV are often immunocompromised, particularly if they have not yet received ART or if they have not achieved viral suppression. This immune suppression can make them more vulnerable to infections, including HAV, and may affect the clinical course of the disease. For instance, HIV-infected children may have a higher risk of severe or prolonged illness from HAV infection, although this is still an area of ongoing investigation. HIV-positive children also tend to have lower antibody titers to HAV after infection, which raises concerns about the possibility of reinfection or reduced immunity [3-5].

Conclusion

Given the high burden of both HIV and HAV in South Africa, the seroprevalence of HAV in HIV-infected and HIV-negative children has important public health implications. Vaccination against HAV is one of the most effective strategies to prevent infection, particularly in high-risk populations. The World Health Organization (WHO) recommends universal hepatitis A vaccination in regions with high rates of endemicity. In South Africa, where HAV is endemic, hepatitis A vaccination may be particularly important for children living with HIV. Although most children in South Africa will have natural exposure to HAV by adolescence, HIV-infected children may require targeted vaccination efforts due to their altered immune responses. The seroprevalence of hepatitis A in South African pediatric populations varies based on several factors, including age, HIV status, and socioeconomic conditions. While children in rural areas and those with lower access to healthcare generally have higher rates of exposure to HAV, HIV-infected children may have altered immune responses that affect their susceptibility to HAV infection.

Acknowledgement

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Conflict of Interest

None.

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***Address for Correspondence:** Selabe Blose, Department of Paediatrics and Child Health, University of Cape Town, Cape Town 7925, South Africa, E-mail: bloses@gmail.com*

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