

Hepatitis A Prevention Strategies, Haiti Case: Should Rescuers Be Immunized

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Abstract

Hepatitis A virus (HAV), a small non-enveloped RNA virus from Picornaviridae family, causes approximately 1.5 million cases of acute hepatitis each year, and is still a major world health problem especially in developing countries. As the risk of getting infected by HAV increases at the time of crisis such as earthquakes, we tried to perform a brief review on current situation of HAV in Haiti, a country that experienced an earthquake measuring 7.0 on the Richter scale recently, and that it might be in danger of experiencing outbreaks of enterically transmittable infective agents such as HAV.

Keywords: Hepatitis A; Haiti, Crisis; Prevention

Introduction

Hepatitis A virus (HAV), a small non-enveloped RNA virus from Picornaviridae family, causes approximately 1.5 million cases of acute hepatitis each year, and is still a major world health problem especially in developing countries.¹ Prevalence of HAV is influenced by several factors such as socioeconomic levels and sanitary conditions, and it has been reported to be from 15% to 100% in various parts of the world.² This viral infection can easily be transmitted via fecal-oral route through person to person contact and contaminated water and food.³ As infrastructures of safe water supply get destroyed, all enterically transmittable pathogens causing infection especially *Vibrea cholera* are more likely to occur during disasters.⁴ Thus, it can be explained why the risk of getting infected by HAV increases at the time of crisis such as earthquakes. Besides safe drinkable water short-

age, catastrophic living condition and overcrowded camps should be kept in mind as other influencing factors which insidiously increase the risk of such infections. That is why we tried to perform a brief review on current situation of HAV in Haiti, a country that experienced an earthquake measuring 7.0 on the Richter scale recently; it might be in danger of experiencing outbreaks of enterically transmittable infective agents such as HAV and HEV.

HAV and Haiti

According to the search found in electronic databases, no direct data on HAV seroprevalence in Haiti is found. To get a general concept of the current magnitude of HAV in this area, we studied related reports from other Central and South American countries. Prevalence rate of HAV has been reported 94.6% and 74.6% in Nicaragua and Brazil, respectively.^{5,6} In a study from Peru, HAV seropositivity has been reported 84% and 46.3% among those who were more than 20 years of age and among children who were 1 to 14 years old, respectively.⁷ On the other hand, there are several reports from Chile, Peru, Venezuela

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and Mexico in which a shifting HAV epidemiologic pattern from high endemicity to intermediate prevalence has been demonstrated.⁷⁻¹⁰ Although this change might seem desirable at first, it can lead to a higher risk of outbreaks among young people who have not been exposed to HAV in their life and are not immune against it. Thus, the importance of HAV preventive measures increases in areas which are changing from hyperendemic to intermediate patterns. Consequently, several studies have discussed the most effective preventive measures against HAV that can be applied in this area, and some of them have clarified that vaccination is an effective preventive tool besides providing higher sanitary levels of life condition.

Transmission Routes

HAV transmission mode is slightly different in various parts of the world according to its prevalence in each region. Person to person contact, contaminated food and water and outbreaks are the most important transmission routes, especially in areas with very high, high, and intermediate endemicity.¹¹ Although no direct data are obtained from electronic databases concerning HAV prevalence in Haiti, it can be estimated to be high or intermediate according to the prevalence of HAV in other Central and South American countries.

Prevention

Whether HAV infection is highly endemic in Haiti or its prevalence is intermediate, the presumable outbreak should be kept in mind as a serious threat in the current circumstance. Although hepatitis A is often asymptomatic during childhood, it can be a fatal infection in older ages, and its morbidity and mortality

increase significantly by age. The perceived benefits of immunizing non-immune population are several in current situations. One of the greatest advantages is that HAV will not spread in the society, and this will decrease the probability of HAV outbreak. Furthermore, it makes sense to immunize rescuers and soldiers who come from HAV non-endemic countries, and are susceptible to this infection. Besides, post-exposure prophylaxis should be taken into consideration when people are exposed to this infection.

Summing up the Prevention Strategies

i) As hepatitis A virus sheds in stool from two weeks before diagnosis of hepatitis, isolation of patients cannot be an effective preventive strategy. Instead, personal hygiene, especially hand washing, should be emphasized as one of the most important protective ways that can prevent infection with HAV, ii) Providing the whole population with safe drinking water can also be an effective preventive method. From the other side, as Haiti is surrounded by sea and sea food is one of the main component of people's diet, monitoring this probable HAV infection causative factor seems to be reasonable and iii) According to HAV prevalence in its neighbors, it makes sense to immunize susceptible population against HAV in Haiti. As the majority of rescuers come from developed countries and they are not immune against HAV, their emergent vaccination should be induced according to available guidelines. Like what is recommended for other healthy travelers from non-endemic areas to endemic regions,¹² administration of one dose of single-antigen hepatitis A vaccine is supposed to provide rescuers with efficient protection. Post-exposure prophylaxis which should be undertaken for those who have been exposed to HAV is shown in Table 1.

Conflict of interest: None declared.

Table 1: Post-exposure prophylaxis for recent HAV exposure without positive history of HAV vaccination

Population	Recommendation
Younger than 12 months or older than 40 years of age	single-antigen hepatitis A vaccine at the age-appropriate dose is preferred
Older than 40 years old	Immunoglobulin is preferred
Younger than 12 months, immunocompromised persons, chronic liver disease patients, and for whom HAV vaccine is contraindicated	Immunoglobulin should be used

References

- 1 Alavian SM. Iraq: A Hot Zone for HAV Infection? *Hepat Mon* 2005; **5**:53-6.
- 2 Ghorbani GA, Alavian SM, Esfahani AA, Assari SH. Seroepidemiology of Hepatitis A Virus in Iranian Soldiers. *Hepat Mon* 2007;**7**:121-4.
- 3 Nasrolahei M, Sharif M, Khalilian A. Association between seropositivity of antibodies against *Helicobacter pylori* and hepatitis A virus. *MJIRC* 2004;**7**:18-23.
- 4 Alavian SM. A Look at the Past History of Hepatitis E in Haiti: Should it be a Warning Sign during the Current Crisis? *Hepat Mon* 2010;**10**: 9-11.
- 5 Perez OM, Morales W, Paniagua M, Strannegard O. Prevalence of antibodies to hepatitis A, B, C, and E viruses in a healthy population in Leon, Nicaragua. *Am J Trop Med Hyg* 1996;**55**:17-21. [8702016]
- 6 Braga WS, Borges FG, Barros Júnior GM, Martinho AC, Rodrigues IS, Azevedo EP, Davis GH, Queiroz MB, Santos SH, Barbosa TV, Castilho Mda C. Prevalence of hepatitis A virus infection: the paradoxical example of isolated communities in the western Brazilian Amazon region. *Rev Soc Bras Med Trop* 2009; **42**:277-81. [19684975] [doi:10.1590/S0037-86822009000300008]
- 7 Vildósola H, Colichón A, Rubio Md, Weil J. Anti-Hav IgG prevalence in a population between 1 and 39 years old in Lima, Peru. *Rev Gastroenterol Peru* 2000;**20**:141-145. [12140596]
- 8 Ibarra V H. The changing epidemiology of viral hepatitis in Chile. *Rev Med Chil* 2007;**135**:229-39. [17406742]
- 9 Tapia-Conyer R, Santos JI, Cavalcanti AM, Urdaneta E, Rivera L, Manterola A, Potin M, Ruttiman R, Tanaka Kido J. Hepatitis A in Latin America: a changing epidemiologic pattern. *Am J Trop Med Hyg* 1999; **61**:825-9. [10586919]
- 10 García-Juárez I, Solórzano Santos F, Alvarez-y-Muñoz MT, Vázquez-Rosales JG. Is there a shift in the epidemiology of hepatitis A in Mexican children? *Rev Invest Clin* 2008; **60**:292-6. [18956550]
- 11 Saberifirooz M. Prevention of Hepatitis A Infection. *Hepat Mon* 2005; **5**:19-27.
- 12 Nguyen CT, Tran TT. Hepatitis vaccination and prophylaxis. *Clin Liver Dis* 2009;**13**:317-29. [19442921] [doi:10.1016/j.cld.2009.02.005]