Risk of Enterically Transmitted Hepatitis A, Hepatitis E, and Plasmodium falciparum Malaria in Afghanistan

To the Editor—Few epidemiological data are currently available concerning the overall health of the Afghan population [1, 2]. We conducted a prevalence study in 2008 to evaluate the risk of enterically transmitted hepatitis A, hepatitis E, and Plasmodium falciparum malaria. Residents of the Kabul district who visited the French military field hospital were enrolled from April through May 2008.

Patients presented with common orthopedic disorders and exhibited no clinical signs of acute infection. Informed consent and parental consent for participants <16 years of age were obtained after an appropriate discussion between an Afghan physician, a member of the medical team, and the participants.

Blood samples were collected, locally frozen at −20°C, and shipped to the military hospital Val de Grace in Paris, France, in accordance with the World Health Organization guidelines for the safe transport of specimens. Serum samples were tested for hepatitis A virus immunoglobulin (Ig) G (ArchitectHAV Ab IgG; Abbott), hepatitis E virus IgG (EIAgen HEV IgG; Adaltis), and hepatitis E virus IgM (EIAgen HEV IgM; Adaltis). Any sample that tested serologically positive for hepatitis E virus was tested for hepatitis E virus RNA to rule out asymptomatic infection [3, 4]. Malaria serology was determined by immunofluorescence (Falciparum-Spot IF; bioMérieux). A reaction with the 1:80 dilution was defined as the threshold of positivity.

In total, 102 anicteric patients were included. The ratio of male to female subjects was 3:4, and the median age of patients was 32.5 years (range, 5–65 years). Hepatitis A virus IgG was detected in 101 (99%) of the specimens; the only sample with negative results had been obtained from a child aged 5 years (table 1). Twenty-nine specimens tested positive for hepatitis E virus IgG (28.4%); hepatitis E virus IgM and hepatitis E virus RNA were not detected. The seroprevalence of P. falciparum malaria was 4.9%.

The cohort of subjects included in this study is not representative of the Afghan population. However, as expected, hepatitis A is highly endemic in Afghanistan; the country displays the usual pattern of feco-orally transmitted agents in childhood. Hepatitis E is highly endemic in the urban area of Kabul, with a high risk of sporadic cases and outbreaks among residents.

Plasmodium vivax malaria is the most prevalent type of malaria in Afghanistan. This study shows the circulation of P. falciparum in Kabul province, situated at an altitude of 1800 m, providing evidence of the adaptation of the vector to cold climatic conditions. These data highlight the potential health risks for the local population, the need to provide safe drinking water and sewage systems, and the need to improve measures to treat and control malaria. These risks should be also be taken into account for humanitarian workers and North Atlantic Treaty Organization troops deployed in Afghanistan. Hepatitis A virus vaccination should be recommended.

Acknowledgments


Potential conflicts of interest. All authors: no conflicts.

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References


Table 1. Seroprevalence of hepatitis A, hepatitis E, and Plasmodium falciparum malaria among Afghan residents.

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<thead>
<tr>
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<th>No. (%) of participants with positive results</th>
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<tbody>
<tr>
<td></td>
<td>All participants</td>
</tr>
<tr>
<td></td>
<td>(n = 102)</td>
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<tr>
<td>Hepatitis A</td>
<td>101 (99)</td>
</tr>
<tr>
<td>Hepatitis E</td>
<td>29 (28.4)</td>
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<tr>
<td>Plasmodium falciparum</td>
<td>5 (4.9)</td>
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* Members of the study group are listed at the end of the text.

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Clinical Infectious Diseases 2009;48:1797–1800
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DOI: 10.1086/598230