

ORIGINAL PAPER

Incidence of Viral Hepatitis in Military Personnel Performing External Missions

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Abstract

Soldiers on missions are at risk of contracting major infectious diseases. Some of the most common food or water-borne diseases include diarrhea (bacterial and protozoan), hepatitis A, and typhoid fever, all of which pose serious threats to communities. The studied group consists of 102 people who performed missions in the theater of operations in Mali between December 2020 and September 2021. The tests were performed in the medical analysis laboratory of the Military Emergency Hospital. The group consists of male with an average age of 35-45 years. Analyzes were performed in the fields of microbiology, virology and biochemistry. negative on departure and return only one person was positive, Ac anti HCV remained the same (97 negative people and 5 positive), Ac anti HAV were present in all military personnel returned from the mission, only one soldier returned with Ag Hbe positive (those in which Ag Bhs was also positive), Ac anti Hbs positive in all military. Following the analyzes performed, we came to the conclusion that the protection measures taken in the theaters of operations are effective, as there is no contamination on the studied group with endemic germs of the area.

Keywords: Mali, Afghanistan, viral hepatitis.

Rezumat

Militarii plecați în misiune sunt expuși riscului pentru contractarea bolilor infecțioase majore. Unele dintre cele mai frecvente boli cauzate de alimente sau de apă includ diareea (bacteriană și protozoară), hepatita A și febra tifoidă, toate acestea reprezentând amenințări serioase pentru comunități. Lotul studiat este alcătuit din 102 persoane ce au efectuat misiuni în teatrul de operațiuni din Mali, în perioada decembrie 2020-septembrie 2021. Analizele s-au efectuat în cadrul laboratorului de analize medicale ale Spitalului Militar de Urgență. Lotul este alcătuit din persoane de sex masculin cu media de vârstă de 35-45 de ani. Analizele s-au efectuat pe domeniile microbiologie, virusologie și biochimie. Nu s-au evidențiat schimbări notabile în afara nivelului titrului de anticorpi pentru hepatita A și B. Acesta a crescut la întoarcere deoarece militarii au fost vaccinați înainte de plecare. Fiecare dintre ei a avut Ag Hbs negativ la plecare, în vreme ce la întoarcere doar o persoană a fost pozitivă. Ac anti HCV au rămas la fel (97 de persoane negative și 5 pozitivi), Ac anti HAV au fost prezenți la toate cadrele militare întoarse din misiune. Un singur militar s-a întors cu Ag Hbe pozitiv (acela la care și Ag Bhs a fost pozitiv), Ac anti Hbs pozitivi în rândul tuturor militarilor. În urma analizelor efectuate am ajuns la concluzia că măsurile de protecție luate în teatrele de operațiuni sunt eficiente, neexistând contaminare pe lotul studiat cu germeni endemici ai zonei.

Cuvinte-cheie: Mali, Afganistan, hepatite virale.

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Viral hepatitis – a group of infectious diseases known as hepatitis A, B, C, D and E - causes acute and chronic liver disease and kills about 1.4 million people worldwide each year, more than tuberculosis or malaria. Only 1 in 20 people with viral hepatitis know they have it, which makes hepatitis a dangerous and silent killer

Mali is one of the countries at risk for contracting major infectious diseases: HIV, HBV, HCV, malaria, diarrheal diseases, or arthropod-borne diseases. The prevalence of these infections is changing and the identification of risk factors associated with each infection in Mali is needed to improve healthcare. In 2018 in Mali the prevalence was: HbsAg = 14.78% and is higher in males and HCV = 2.32%.

In Afghanistan, 1804 cases of hepatitis were diagnosed and reported in 2015 - 1343 cases of hepatitis B and 461 cases of hepatitis C. However, the burden of the disease is likely to be significantly higher.

In Romania the incidence of hepatitis B and C registers a downward trend, in 2016 the incidence of hepatitis B = 0.99% 000 inhabitants and the incidence of hepatitis C = 0.39% 000 inhabitants

MATERIAL AND METHOD

The soldiers who went on a mission are exposed to the risk of contracting infectious diseases endemic to the area where the theater of operation is located. We conducted a study on a batch of 102 military personnel who carried out a mission in theaters of operations in Mali and Afghanistan between December 2020 and September 2021. The analyzes were performed within the Medical Analysis Laboratory on the card of the Constanța Military Emergency Hospital.

The paraclinical diagnosis scheme in the field of virology are: Ag Hbc, Ac HCV, AgHAV, Ac HAV, Ag Hbc, Ac Hbc, HIV, RPR, TPFA.

Virology tests for hepatitis are performed on the Minividas analyzer and are performed by ELFA (enzyme linked fluorescent assay) method. of ELISA method.

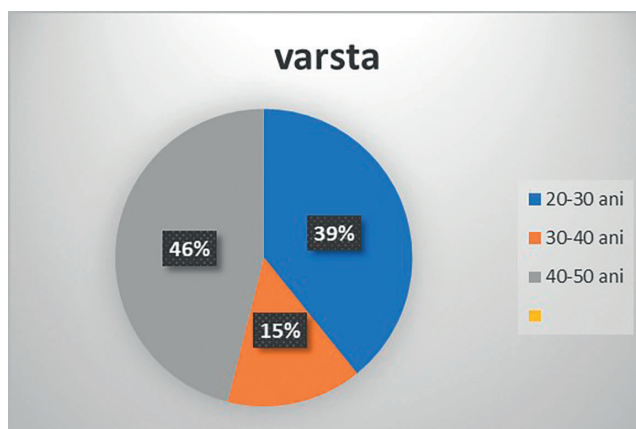


Figure 1. Distribution by age groups

The ages of the soldiers who went on missions can be classified in the groups 20-30,30-40 and 40-50 years. All subjects studied are male.

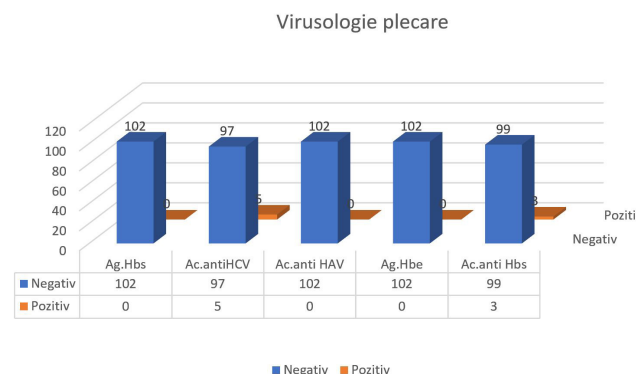


Figure 2. Virology departure

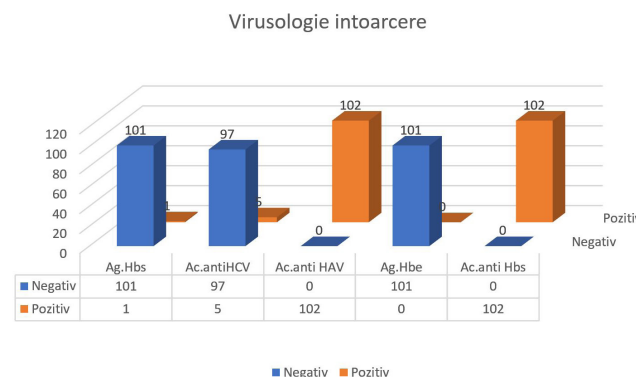


Figure 3. Return virology

The results of the laboratory analyzes in the field of virology revealed changes between the values from departure and those from return from missions:

- all soldiers had negative Hbs Ag on departure and on return only one person was positive;
- antibodies anti-HCV remained the same (97 negative and 5 positive);
- antibodies anti-HAVs were present at all military personnel returned from the mission;
- only one soldier returned positive with Ag Hbe (the same one with which Ag Hbs was positive);
- antibodies anti-Hbs positive in all military;

DISCUSSIONS

In Mali the incidence of hepatitis B and C is high, a study conducted in 2018 showed the prevalence of HBsAg = 14.78% and HCV = 2.32¹. While in Romania the evolution of the incidence of viral hepatitis B and C in Romania in the period 2006–2020 is declining from one year to another, in 2020 they entered the national surveillance system for viral hepatitis B and C a number of 48 cases 5 times less than the previous year⁶. In Afghanistan, 1804 cases of hepatitis were diagnosed and reported in 2015 - 1343 cases of hepatitis B and 461 cases of hepatitis C. However, the burden of the disease is likely to be significantly higher⁵.

Soldiers on missions are vaccinated before leaving with hepatitis B and A virus serum, a measure that has been shown to be beneficial to staff on missions in areas endemic for these viral infections. Only one

person returned with viral margins for hepatitis B present but a history of hepatitis B and this may be due to viral reactivation.

CONCLUSIONS

1. Preventive methods have been effective - vaccines have protected them (increased antibody titer on arrival from mission versus departure, for hepatitis A and B).

2. The microclimate in the operating theater respects the hygienic-sanitary measures, so that the health of the military is not endangered.

3. Although Mali and Afghanistan are endemic areas for military viral hepatitis who performed the mission in these areas were protected from risk factors in these areas.

Compliance with ethics requirements: The authors declare no conflict of interest regarding this article. The authors declare that all the procedures and experiments of this study respect the ethical standards in the Helsinki Declaration of 1975, as revised in 2008(5), as well as the national law. Informed consent was obtained from all the patients included in the study.

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