

See discussions, stats, and author profiles for this publication at: <https://www.researchgate.net/publication/326316889>

Crimean Congo hemorrhagic fever: A brief report regarding kidney involvement

Article · July 2018

DOI: 10.15171/rijp.2018.31

CITATIONS

0

READS

64

5 authors, including:

[Masoud Amiri](#)

Erasmus MC

134 PUBLICATIONS 583 CITATIONS

[SEE PROFILE](#)



[Malihe Sohrabivafa](#)

Dezful University of Medical Sciences

11 PUBLICATIONS 6 CITATIONS

[SEE PROFILE](#)

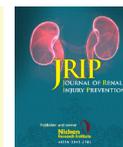
Some of the authors of this publication are also working on these related projects:



Risky Behaviors among adolescents [View project](#)



Journal of Preventive Epidemiology [View project](#)



Crimean Congo hemorrhagic fever: a brief report regarding kidney involvement

CrossMark
click for updatesZaher Khazaei¹, Isan Darvishi², Masoud Amiri^{3,4}, Malihe Sohrabivafa⁵, Shiva Kamran^{6*}¹Leishmaniasis Research Center, Sabzevar University of Medical Sciences, Sabzevar, Iran²Surgical Technology Department, School of Nursing and Midwifery, Shiraz University of Medical Sciences and Healthcare Services, Shiraz, Iran³Department of Epidemiology and Biostatistics, Shahrekord University of Medical Sciences, Shahrekord, Iran⁴Department of Epidemiology, Erasmus Medical Center, Rotterdam, The Netherlands⁵Department of Health and Community Medicine, Faculty of Medicine, Dezful University of Medical Sciences, Dezful, Iran⁶Department of Epidemiology, School of Public Health, Ilam University of Medical Sciences, Ilam, Iran

ARTICLE INFO

Article Type:

Letter to Editor

Article History:

Received: 19 March 2018

Accepted: 9 May 2018

Published online: 23 May 2018

Keywords:

Crimean Congo hemorrhagic fever, Urine neutrophil gelatinase-associated lipocalin, Hematuria

Implication for health policy/practice/research/medical education:

Patients with CCHF, especially children, hematuria, proteinuria, oliguria and azotemia could have been found by urinalysis. Moreover, because of the fact that proteinuria and urine neutrophil gelatinase-associated lipocalin (uNGAL) levels could increase in children with CCHF; thus, monitoring of renal involvement related to CCHF by measurement of urine total protein and uNGAL is recommended.

Please cite this paper as: Khazaei Z, Darvishi I, Amiri M, Sohrabivafa M, Kamran S. Crimean Congo hemorrhagic fever: a brief report regarding kidney involvement. J Renal Inj Prev. 2018;7(3):129-131. doi: 10.15171/jrip.2018.31.

Crimean Congo hemorrhagic fever (CCHF) is an acute hemorrhagic febrile viral disease, which is transmitted by a virus from the Arbovirus family of the Bunyaviridae family and the type of norovirus. This type of disease is common between the human and veterans emerging in human sporadically and/or epidemically in some cases (1). This disease was considered as one of the most important hemorrhagic viral fevers in human owing to the high mortality ranging from 10% to 40% as well as possible nosocomial transmission (2). The aforementioned disease was endemically broke out in Africa, Asia, Middle-East, and Eastern Europe. Some 914 patients with CCHF were reported in 2017 with the rate of 106 subjects in India (3).

The most frequency of CCHF was reported in Somalia, Sudan, India, Pakistan, Iran, Iraq, and Egypt although this disease emerges right across the world (4). The disease was first diagnosed in Crimea, Russia in 1994. Some frequencies of the disease were demonstrated in the aforementioned countries with the highest rate in Djibouti being 12000 patients from 1991 to 1992 (1,5). The rate of incidence in some countries varies in different seasons

being endemic in Iran, Russia, Iraq, Turkey, Afghanistan, and Pakistan. Iran has common borders with the countries mentioned (6,7). CCHF was accounted as a advent disease in Iran firstly reported in Chahar-Mahal and Bakhtiari province, Southwest of Iran in 1999. Afterwards, this type of disease was reported in other regions in Iran as a pivotal health issue (1,8).

Nowadays, a fatal rate of 17.6% was reported in some 26 provinces of Iran with the highest incidence and mortality rates in Sistan and Baluchestan, Khorasan and Khozestan provinces (1,9). An ascending trend of CCHF was reported in Iran ranged from 0.17% to 0.46% from 2009 to 2015, but except for 2010. Increasing the temperature and humidity of the air, as well as the presence of hard-tailed mites in the area of hyaloma and carriers of the disease, increase the incidence of disease (4).

The groups under the risks are including veterinarians, butchers, animals' centers personnel significantly contacting with blood, and animals' tissues (1). The most common pathways of transmission of the disease were reported as contacting with blood, animals' excretions and polluted tissues, abortions, animal's birth discharge,

*Corresponding author: Shiva Kamran, Email: Shivakamran73@gmail.com

human contacting with an infected, tick biting and/or crushing contaminated tick on the skin surface (3).

The most common symptoms of the aforementioned disease were indicated as the sudden onset similar to flu, together with fever, myalgia, dizziness, neck pain and rigidity, back pain, headache, photophobia. Some early symptoms of the disease are including nausea, vomiting and sore throat together with diarrhea and abdominal pain. The diagnosis of disease was consolidated on epidemiologic assessments and clinical manifestations via determining anti-CCHF specific antibody. These antibodies are of IgM and IgG measured using ELISA (2). Crimean-Congo hemorrhagic fever (CCHF), known also as Asian Ebola, is a fatal viral disease with substantial increase across the world in recent years (10) with the mortality rate of 10% to 80% in patients (11) with emphasizing higher mortality rates of CCHF in the renal failure patients (12). It is recommended that CCHF should be considered in differential diagnosis of renal failure, especially in areas with an endemic situation of CCHF infection (13). In addition, patients with CCHF, especially children, hematuria, proteinuria, oliguria and azotemia could have been found by urinalysis (14). Moreover, because of the fact that proteinuria and urine neutrophil gelatinase-associated lipocalin (uNGAL) levels could increase in children with CCHF; thus, monitoring of renal involvement related to CCHF by measurement of urine total protein and uNGAL is recommended (15). The incidence rate of the disease could be declined and the subjects can be prevented infecting by performing prophylactic methods of contacting with livestock and contaminated livestock products, improvement of the environment and the removal of the tick, consumption of meat products under veterinary centers and health standards, all stages from livestock to distribution and consumption of livestock products (4). Patients can also be identified with rapid diagnosis of clinical symptoms and laboratory serologic tests; moreover, by isolating the sufferer and starting treatment, it will prevent other people suffering or death (4,16).

The basis for the prevention of common communicable diseases between humans and animals is the prevention of contact between the infected animal and its products with humans or the degradation of the disease (3,6,9). Given the increasing trend of displacement of people in the world, as well as the possibility of transmitting various types of contagious diseases by carriers and patients, training health tips on risk groups and health personnel to prevent the congenital hemorrhagic fever is very necessary.

Author's contribution

All authors drafted the first version. ZKH, SH K, MS, MA and ID edited the final draft. All authors reviewed, commented and approved the manuscript.

Conflicts of interest

The authors declare no conflict of interest.

Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication) have been completely observed by the authors.

Funding/Support

None.

References

1. Rezaei F, Rezazadeh A, Moghaddami M, Ahmadizadeh A, Rezazadeh F. Reported 5 cases of Crimean-Congo hemorrhagic fever in Fars province in 2011. *Iran South Med J.* 2012;15:241-8.
2. Masoudy G, Karimi-aval M, Ansari A, Abasi MH, Abaszadeh-Bazi M. The Predictors of Preventive Behaviors of Crimean-Congo Hemorrhagic Fever in Zabol Ranchers Based on Health Belief Model. *Health Education and Health Promotion.* 2016;3:381-90. [Persian].
3. Swain K, Gupta S, Jwalagatti VK, Panigrahi S, Routray A, Sahoo S, et al. Crimean Congo Hemorrhagic Fever (CCHF): A chronicle of human, tick and animal. *J Entomol Zool Stud.* 2017;5:956-961.
4. Al-Abri SS, Al Abaidani I, Fazlalipour M, Mostafavi E, Leblebicioglu H, Pshenichnaya N, et al. Current status of Crimean-Congo haemorrhagic fever in the World Health Organization Eastern Mediterranean Region: issues, challenges, and future directions. *Int J Infect Dis.* 2017;58:82-89. doi: 10.1016/j.ijid.2017.02.018.
5. Jabbari A, Tabasi S, Abbasi A, Alijanpour E. Crimean-Congo hemorrhagic fever: treatment and control strategy in admitted patients. *Caspian J Intern Med.* 2012, 3:443-4.
6. Chinikar S, Ghiasi SM, Hewson R, Moradi M, Haeri A. Crimean-Congo hemorrhagic fever in Iran and neighboring countries. *Journal clinical virology.* 2010;47:110-4. doi: 10.1016/j.jcv.2009.10.014
7. Hewson R, Chamberlain J, Mioulet V, Lloyd G, Jamil B, Hasan R, et al. Crimean-Congo haemorrhagic fever virus: sequence analysis of the small RNA segments from a collection of viruses world wide. *Virus Res.* 2004, 15;102:185-9.
8. Chinikar S, Ghiasi SM, Moradi M, Goya MM, Shirzadi MR, Zeinali M, et al. Geographical distribution and surveillance of Crimean-Congo hemorrhagic fever in Iran. *Vector-Borne Zoonotic Dis.* 2010;10:705-8. doi: 10.1089/vbz.2009.0247
9. Hoogstraal H. The epidemiology of tick-borne Crimean-Congo hemorrhagic fever in Asia, Europe, and Africa. *J Med Entomol.* 1979 May 22;15:307-417.
10. Smego RA Jr, Sarwari AR, Siddiqui AR. Crimean-Congo hemorrhagic fever: prevention and control limitations in a resource-poor country. *Clin Infect Dis.* 2004 Jun 15;38:1731-5.
11. Whitehouse CA. Crimean-Congo hemorrhagic fever. *Antiviral Res.* 2004;64:145-60.
12. Jamil B, Hasan RS, Sarwari AR, Burton J, Hewson R, Clegg C. Crimean-Congo hemorrhagic fever: experience at a tertiary care hospital in Karachi, Pakistan. *Trans R Soc Trop Med Hyg.* 2005 ;99:577-84. doi: 10.1016/j.trstmh.2005.03.002
13. Ardalan MR, Shane Tubbs R, Chinikar S, Shoja MM. Crimean-Congo haemorrhagic fever presenting as thrombotic microangiopathy and acute renal failure.

- Nephrol Dial Transplant. 2006;21:2304-7. doi: 10.1093/ndt/gfl248
14. Ergonul O. Crimean-Congo hemorrhagic fever virus: new outbreaks, new discoveries. *Curr Opin Curr Opin Virol.* 2012;;215-20. doi: 10.1016/j.coviro.2012.03.001.
 15. Deveci K, Uysal EB, Kaya A, Sancakdar E, Alkan F. Evaluation of renal involvement in children with Crimean-Congo hemorrhagic fever. *Jpn J Infect Dis.* 2013;66:493-6.
 16. Ziapour SP, Kheiri S, Mohammadpour RA, Chinikar S, Asgarian F, Mostafavi E, et al. High Risk Behavior and Practice of Livestock and Meat Industry Employees regarding Crimean-Congo Hemorrhagic Fever in Nur County, Northern Iran. *J Mazandaran Uni of Med Sci.* 2016;25:49-61.

Copyright © 2018 The Author(s); Published by Nickan Research Institute. This is an open-access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.