

Crimean-Congo Hemorrhagic Fever: A Threat for Housewives

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Summary

Crimean-Congo Hemorrhagic Fever (CCHF) is a tick-born disease. It is usually transmitted to man following a tick bite or through contact with the blood of an infected patient or blood-contaminated specimens. The mortality rate of CCHF is up to 30%. Five cases of our 7 cases had contacted with livestock or their products. Malaise was the most frequent complaint and fever placed in the second position. Leukopenia, thrombocytopenia and transaminase increases reported in all seven cases. All patients were treated with oral Ribavirin. Both RT-PCR and ELISA tests on serum samples were positive in all cases. As seen in this study and similar studies contact with livestock and animal products is one of the main factors in the transmission of the disease. So, we can conclude that education and awareness of higher risk groups can play a significant role in reducing the risk of being infected with the virus.

Introduction

Crimean-Congo Hemorrhagic Fever (CCHF) is a tick-born disease caused by a Nairovirus of the family Bunyaviridae [1,2]. The disease was first characterized in the West Crimean region of the former USSR in 1944 [3]. In 1956, a virus was isolated from the blood of a patient in the Belgian Congo and became the prototype of the Congo virus [4,5]. In 1969, Casals antigenically demonstrated similarity between the Crimean and the Congo prototypes [6], and then the name Crimean-Congo Hemorrhagic Fever virus gradually took acceptance.

The disease is usually transmitted to man following a tick bite or through contact with the blood of an infected patient or blood-contaminated specimens. The incubation period of CCHF depends on the method of transmission. It can extend from 2 up to 7 days following a tick bite or 10 up to 14 days after blood transfusion [7,8]. The onset of the illness is sudden, with fever, chills, severe muscular pains, headache, vomiting and pain in the epigastria and lumbar regions. A hemorrhagic state develops from the third to fifth days and manifests with petechiae, purpura, epistaxis, hemoptysis, hematemesis, melena and hematuria. In patients who recover, body temperature decreases within the 10th and 20th days and bleeding stops; however, convalescence can last up to 4 weeks or longer. Death occurs from massive hemorrhage and cardiac arrest, from the 7th to 9th days after onset of the illness [7,8]. The mortality rate of CCHF reported, is up to 30% in some studies [7]. Several studies have been done concerning probable risk factors like demographic features and the vocation states. It seems that butchers, veterinarians and shepherders are at a special risk due to probable contamination with infected tissues and blood from animals [9]. The efficacy of ribavirin in treatment [10-12] and prophylaxis [13] for CCHF have been reported.

In this case series we describe symptoms, signs, laboratory values, medications and outcomes of seven patients that have been admitted to Valiasr university hospital of Birjand from November 2011 to October 2012.

Case Series Report

Seven confirmed cases of CCHF hospitalized in Infectious disease ward of Valiasr hospital in Birjand from November 2011 to October 2012. Four cases were women and three cases were men. The youngest one was 28 years old and the oldest one was 54 years old. The average age of these cases was 41.71 years old. Three cases of four female patients were housekeeper and the other one was a nurse. Two cases of three male patients were rancher that one of them was livestock Slaughterer

too. The other one was butcher. Four cases had urban life and 3 cases lived in rural areas. All of them had persian nationality.

Five cases of these 7 cases had contacted with livestock or their products like their meat. There was no history of tick bite between these seven cases. One case was a nurse. She had a history of close contact with a patient with hemorrhage and non poor general conditions and suspicious to CCHF. That patient has died before getting any serum sample and the nurse find some similar symptoms and signs in herself after a while. There was one case that had no history of close contact to any patient or infected animal or any tick bite.

Initial symptoms and signs of these patients show that malaise is the most frequent complaint and were seen in all of them and fever placed in the second position that was seen in 5 cases.

Vomiting was one of chief complaints in four patients that in 2 cases it was in the form of hematemesis.

4 cases had epistaxis that in one of them it was the only complaint at first and forced him to come to the hospital. Abnormal vaginal bleeding was observed in 3 of 4 female cases during the period of their admission. Gastroenteritis was seen in 2 cases that in one of them it was in the form of dysentery and was the chief complaint of this patient when she came to the hospital emergency division. Stool smears and cultures were negative for bacterial and amoebic infections.

In 2 cases there were abdominal pain complaints. Subcutaneous hemorrhages and ecchymosis were seen in 2 cases that most of them were seen in upper extremities. 3 patients had decreased level of consciousness that 2 cases of them died. Cutaneous rash, headache and chills were observed only in one patient.

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Laboratory results show leukopenia, thrombocytopenia, and transaminase increases in all seven cases. Anemia and decrease in hemoglobin level were reported in 5 cases.

Evaluation of coagulation tests shows rising in PTT, PT and INR in 3 cases. Proteinuria was found in urine samples of 3 patients. In two patients increased serum creatinine level was reported. Increased serum LDH levels were also observed in these two cases.

All patients were treated with oral Ribavirin. Both RT-PCR and ELISA tests on serum samples obtained from patients were positive in all cases. Six patients required to receive platelets and each patient received an average of 34 units of platelets. FFP was required in 4 patients were prescribed an average of 28 units for each one. In 3 cases Packed Red Blood Cells (PC) were prescribed and an average of 8 units required for each one. Cryoprecipitate was needed to be administered during hospitalization in 2 cases (10 units for each one).

Five cases of these seven patients with confirmed CCHF were discharged from the hospital with good general condition and 2 cases died and both of them were female. One of them was a nurse that had close contact to a patient that was suspicious to CCHF and another one was a housekeeper woman who had sliced meat of a sheep that was slaughtered by her husband. Her husband was one of our seven cases and their symptoms started at the same time. The wife was admitted with dysentery and with progression to massive gastrointestinal, vaginal and pulmonary bleeding eventually died and her husband who was admitted with epistaxis, experienced gingival bleeding for a few days and discharged from the hospital with good general condition.

Conclusion

As seen in this study and similar studies [13] contact with livestock and animal products is one of the main factors in the transmission of the disease and the patient's job is an important factor in susceptibility to the disease. This is why CCHF is known more as an occupational disease and ranchers, slaughterer and butchers are at greater risk. On the other hand, this study shows that most infected housewives have contacted with livestock and livestock products. So we can conclude that education and awareness of higher risk groups can play a significant role in reducing the risk of being infected with the virus.

Fever and malaise are common symptoms in patients who are dealing directly with livestock and livestock products alongside bleeding

from different parts of the body. The common areas for this disease including Iran, should ignite the suspicion to CCHF and physician should request basic laboratory tests for this disease. Leukopenia, thrombocytopenia, anemia, increased hepatic aminotransferase and coagulation test disorders as the most common laboratory findings besides complete patient's history convince the physician to admit the patient and to start supportive therapy and Ribavirin [10-12] as the only approved available treatment for CCHF.

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