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Case Report

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A CASE OF CRIMEAN-CONGO HEMORRHAGIC FEVER DISEASE DUE TO A SCORPION BITE WITH A LONG INCUBATION PERIOD AND REVIEW OF THE LITERATURE

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ABSTRACT

Crimean-Congo hemorrhagic fever is a disease of the viral hemorrhagic fever group, and one of the most common viral hemorrhagic fevers in the world. In this case, a 74-year-old male patient with a Crimean-Congo diagnosis presented with nausea, vomiting, diarrhea, elevated liver function tests, as well as neutropenia and thrombocytopenia about 15 days after a scorpion bite. It was aimed to present the diagnosis and management of the long incubation period Crimean Congo disease after scorpion bite as a primer purpose To draw attention and to increase the awareness of the physicians to the Crimean Congo as a secondary purpose for this article.

KEYWORDS: Long incubation period, Crimean-Congo Hemorrhagic Fever, scorpion bite.

INTRODUCTION

Crimean-Congo hemorrhagic fever (CCHF) is caused by an RNA virus in the genus Nairovirus of the family Bunyaviridae. Crimean Congo is a zoonosis caused by the CCHF virus. CCHF is a tick-borne infectious disease that is endemic in some parts of our country, characterized by fever and bleeding.[1-3]

According to Turkish Ministry of Health data, 9,069 cases of CCHF were reported between 2002 and 2014 in Turkey, and 440 died.[4] The disease is most common, from the beginning of March to the end of October, especially during periods when the tick population is active between April and July. In Turkey, 70% of patients had been in contact with ticks and about 30% had been in contact with domestic animals. This disease is particularly threatening to farmers and other agricultural workers, veterinarians, laboratory workers, and hospital staff. The CCHF virus can be inactivated by disinfectants, including 1% hypochlorite and 2% glutaraldehyde and heating at 56°C (133°F) for 30 min.[5-7] Due to the potential to cause community and nosocomial outbreaks, a rapid and accurate diagnosis of CCHF is crucial for case management and protecting medical personnel.[9]

Clinical presentation is from a mild clinical picture of fever, headache, fatigue, sore throat, nausea and vomiting, to serious and heavy form, which is characterized by chills and flickering, serious bleeding, shock, blurred vision, even death. Nosocomial infections have also been reported in a small number of patients with CCHF.[1]

CCHF has become a public health problem for many reasons, including a wide geographical distribution, causes fatal disease in humans, causes potential outbreaks, no vaccine is available, limited treatment options, and possible use as a biological agent in terrorist incidents. Because of the high mortality rate, early diagnosis and treatment are very important. The mortality rate among CCHF cases in Turkey is about 5% (9). Clinically defined poor prognosis criteria are confusion, nuchal stiffness, bleeding from more than one region, prolonged fever, impaired consciousness, splenomegaly, somnolence, hematemesis, melancholia, high fever, and renal failure.[1-5]

It was aimed to present the diagnosis and management of the Crimean Congo disease as primer purpose. It is planned to increase the awareness of the physicians to the Crimean Congo as a secondary objective. In this article, a 74-year-old male living in a rural area presented with CCHF that developed 15 days (long incubation period) after a scorpion bite. Because of the long incubation period, we would like to present this case There are no case in the literature with long incubation period like that.

CASE REPORT

A 74-year-old male patient living in Aydın presented at the hospital because of chills, coldness, nausea, and vomiting. Our patient did not have any diseases in his

history. The patient was suspected of CCHF because of the scorpion bite story; and was admitted to the intensive care unit with a pre-diagnosis of CCHF. The written informed consent have taken from the patient at admission. There was no medication history. The patient had elevated liver function tests and pancytopenia (white blood cell count: 1,600 K/uL platelets: 41,000 K/uL). Glasgow coma scale was $E_4M_4V_4$ at the admission of our patient. Peripheral O_2 saturation was 92 with heart rate: 118 /min and blood pressure: 88/59 mmHg. The patient have high fever ($39,3^0$C) and sleepy condition.

Symptomatic treatment was started for the patient. Paracetamol was given for the fever. Intravenous fluid replacement was initiated because of impaired oral intake. The patient was referred to the infectious disease clinic for treatment of CCHF and the hematology clinic because of the pancytopenia. The Ministry of Health has been informed about the suspected Crimean Congo case. The samples were sent to the Ministry of Health and the patient was recommended to be treated with 30 mg/kg ribavirin followed by a 4 × 1 gr treatment. Peripheral blood smears were evaluated by the hematology clinic; peripheral spread; erythrocytes were normochromic normocytic, 76% neutrophils, 6% myeloid precursors, 12% monocytes, 6% lymphocytes, and a platelet count of 60–70,000 . Daily monitoring of complete blood count was recommended. Due to the low thyroid stimulating hormone (TSH) levels, the endocrinology clinic was consulted. Thyroid function tests, as well as levels of antithyroglobulin, antithyroid peroxidase, and TSH receptor antibodies were determined. As results, TSH was low, all antibodies were normal, and the patient was re-evaluated by the endocrinology clinic to begin of thyramazol 2 × 1, and polyclinic control was recommended.

An N-acetylcysteine infusion was given to the patient for the elevated liver function tests. The patient was followed up with daily liver function tests, INR, and a hemogram. The patient's polymerase chain reaction (PCR) result was positive for CCHF, and the infectious disease clinic was consulted again. The infectious disease clinic recommended that the patient's ribavirin treatment be completed in 10 days. The patient did not have any bleeding during follow-up, and the fever was under control on day 3. The liver function test results decreased and the pancytopenia recovered so he was discharged with follow-up at the endocrinology and infectious diseases outpatient clinics. The laboratory values from hospitalization to discharge are shown below (Table 1).

Our patient was followed by nasal cannula no invasive / non-invasive mechanical ventilator was used.

Table 1: Blood Parameters of the Hospitalization and Before Discharge.

	1. Day	3. Day	5. Day	7. Day	9. Day	11. Day	14. Day
WBC (K/uL)	1690	10330	6600	5080	3440	2960	5530
Neutrophils (K/uL)	630	6970	4840	3050	1930	1430	2230
HGB (g/dL)	15	14,4	13,7	13,1	13	13,2	13,7
PLT (K/uL)	41,000	77,000	144,000	262,000	277,000	298,000	436,000
AST (IU/L)	748	315	120	44	44	37	22
ALT (IU/L)	470	271	188	88	85	68	36
LDH (U/L)	902	509	363	283	292	237	211
PTZ (INR)	0.92	0,93	-------	1,15	1,9	1,14	1,10
APTT	59,6	44,1	-------	32,6	65,1	31,4	30
UREA (mg/dl)	41	25	32	34	39	30	------
CRE (mg/dl)	0,60	0,53	0,44	0,51	0,51	0,55	0,54

WBC: White blood cells,
HGB: Hemoglobin,
PLT: Platelets,
AST: Aspartate aminotransferase
ALT: Alanine aminotransferase
LDH: Lactate dehydrogenase
PTZ: Prothrombin time
APTT: Activated partial thromboplastin time
CRE: Creatine

DISCUSSION

The CCHF virus was first isolated in 1967 from a patient in Uzbekistan and was named Crimean-Congo in 1956, as it has similarities to a virus isolated in the Congo. CCHF; is characterized by fever and hemorrhaging and 5–10% of cases develop a fatal zoonotic infection after tick contact. The reported mortality rate in Turkey is approximately 5%.[1,2,10]

The duration of incubation; is usually 1–3 days following infestation by the virus; but this period can extend up to 9 days. Infections occur due to direct contact with blood, body fluids or other tissues for 5–6 days, but it can be up to 13 days. In our case; there was contact with a scorpion 15 days before the complaints began. Fever, malaise, headache, hypersensitivity, severe pain in the back, legs and arms, and marked loss of appetite are significant clinical manifestations in patients.[11] Our patient also have high fever and high elevated liver enzymes and pansitopenia Our patient different from literature cases with long incubation period.

Serological evidence of the CCHF virus first appeared in 1970 in Turkey.[12,13] However, the first symptomatic human case in Turkey was reported in Tokat Province in Kelkit Valley in 2002. The Ministry of Health defined the illness in Tokat and nearby provinces and it has been included in the C Group Notification Compulsory Diseases since December 2003.[3,9,14,15] In recent years, the distribution of the disease has expanded, and sporadic case reports have been made from almost every region in Turkey.[9]

The mortality rate among CCHF cases in Turkey is about 5%.[4] Tick disease activity is most common in Turkey between April and October. The number of cases is peaks in June and July.[3,9]

Disease symptoms occur suddenly. Initially, influenza-like fatigue, muscle weakness, dizziness, headache, sore throat, and photophobia are seen. In the early period, there may be nausea, vomiting, and a sore throat; and diarrhea and abdominal pain may accompany these symptoms. Agitation, drowsiness and depression can also be seen in patients. Other clinical findings; include tachycardia, lymphadenopathy, and petechial eruptions of the skin and internal mucosal surfaces, such as the mouth and throat. CCHF can cause hemorrhages, such as petechiae, ecchymoses, melena, hematuria, epistaxis, and gingival bleeding. Hepatitis can also be detected in patients. Severe complications, such as hepatorenal insufficiency and pulmonary insufficiency may develop after the fifth day of the disease. Death often occurs during the second week of illness.[1]

CCHF disease has been an important public health problem in Turkey since 2002. No vaccine to protect against the disease or antiviral drug for treatment are available. Ticks are both the vector and reservoir; and clearly play an important role in the spread of the disease. For these reasons, preventing contact with ticks and the virus is the basis for protection against CCHF disease. People at high risk must be educated about ways to protect and decontaminate ticks. Giving training to increase awareness about ticks is also useful. CCHF disease should be considered in the differential diagnosis of patients with elevated liver function tests and pancytopenia during the appropriate seasonal periods and who live in endemic regions. Complaints of patients at the time of presentation may not be specific and hemorrhaging may not be observed. Patients should be questioned in terms of other transmission modes even if they have no tick bites. The whole body should be scanned in patients without tick bites for possible and their profession should be questioned. Those who work with livestock should spray their animals and, if necessary, repellents should be used. High-risk occupational groups should use personal protective equipment carefully. Long incubation period such as our patient should be remembered at suspected case.

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