



## Suspected Crimean-Congo Hemorrhagic Fever in Najaf Province on April 2022: Case Series Study

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**Case Series Study**

### Summary

**Background:** Crimean-Congo hemorrhagic fever (CCHF) is a tick-borne viral disease that has been linked to a high mortality rate in a number of countries. CCHF virus is transmitted to people either by tick bites or through contact with infected animal blood or tissues during and immediately after slaughter. The majority of cases have occurred in people involved in the livestock industry, such as agricultural workers, slaughterhouse workers and veterinarians. CCHF was first reported in Iraq in 1979. According to published reports, the number of confirmed cases annually between 1998 and 2009 ranged from zero to six; however, 11 confirmed and 28 suspected cases were reported during 2010 in a single province over a period of 3 weeks, with a case fatality rate of 36%.

**Objective:** To describe the suspected CCHF cases, determine the mechanism of transmission, and recommend preventive measures to avoid future outbreaks.

**Case presentations:** Here we present a series of suspected cases of CCHF in some areas of Najaf province (two cases in Kufa district, two cases in Al-Mishkhab district, and one case in North Najaf district). The date of onset of most cases were during April 2020. Most of cases were in age group (20-29 years). Diagnosis of patients was based on clinical symptoms, history of patients, and close link to the confirmed cases. The main clinical features of these cases were fever, vomiting and hemorrhagic symptoms. Blood samples for the last four patients were sent to the central laboratory in Baghdad and all results were negative.

**Conclusions:** This study highlights the importance of early clinical suspicion of CCHF and gives alarm to appearance of CCHF cases especially among butchers and those who live in rural area Raising awareness of health workers and community about the disease and improving the protective measures against the spread of CCHF are recommended

**Keywords:** Crimean-Congo Hemorrhagic Fever, outbreak, Najaf

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## 1. INTRODUCTION

Crimean-Congo hemorrhagic fever (CCHF) is a tick-borne viral disease that has been linked to a high mortality rate in a number of countries [1]. In 1944 Crimea was the first description of the disease where it affected more than 200 persons and led to severe hemorrhagic symptoms as the clinical hallmark of the disease [2]. The causative agent (Nairovirus) belongs to the Bunyaviridae family and was first isolated in Congo in 1956. The CCHF virus is transmitted to people either by tick bites or by contact with blood or tissues of the infected animals during and immediately after slaughter [3]. The majority of cases have occurred in individuals involved in the livestock industry, such as slaughterhouse workers, agricultural workers, and veterinarians [3]. In Iraq, the incidence of CCHF has not been well described, the first case of CCHF was reported in the country in 1979; a total of 10 cases and seven deaths were reported in the Baghdad area. Several cases were also reported in 1980 in Halabja city in Sulaimani Province [4]. According to published reports, the number of confirmed cases annually between 1998 and 2009 ranged from zero to six; however, 11 confirmed and 28 suspected cases were reported during 2010 in a single province over a period of three weeks, with a case fatality rate of 36% [4]. However, in recent years the number of cases has constantly risen. Most of the cases in Iraq were in Thi-Qar province about 24 cases. The onset of CCHF is sudden, with initial signs and symptoms which include headache, high fever, joint pain, back pain, stomach pain, and vomiting. Red eyes, a red throat, a flushed face, and petechiae (red spots) on the palate are common. Symptoms may also include jaundice, and in severe cases, changes in mood and sensory perception [5].

## 2. Case Reports

During 12 April 2022 to 29 April 2022, five patients were admitted to Al Sader and Al Furat Al Awsat hospitals with suspicion of Hemorrhagic fever. The cases are reported in the following:

### Case 1

On 12th April 2022, the first suspect case was reported; his age was a 28-year-old, male he was a butcher lived in Al-Mishkhab district. On 11th April 2022, he was presented with a sudden onset of fever, vomiting, generalized body pain, epistaxis, bleeding from injection

side, conjunctivitis, bleeding under the skin and gums bleeding. On 13th April 2022, he was admitted to Al-Sader hospital and treated but his condition deteriorated and he died suddenly. No further investigations have been conducted to the patient due to be late in admission to hospital. According to his family, he was involved to slaughter a sick cow before the onset of symptoms.

### **Case 2**

On 9th April 2022, a female patient, 25 years old, from the Kufa district was admitted to Al-Furat AL-Awsat hospital with sever pneumonia then on 13th April 2022 she was presented with vomiting, generalized body pain, bleeding from the injection site and petechiae. Laboratory tests showed normal count of WBC and platelet. No history of contact with animals. Serologic testing was conducted for confirmation of haemohagic fever by taking blood sample from the patient and sending it to the central lab. in Baghdad, and the result was negative.

### **Case 3**

On 20 th April 2022, a third female patient, 25 years old, from the Al-Mishkhab district, she was the wife of the first case, developed symptoms fever, vomiting, fatigue and bleeding under skin after contact with the first case since one week and On 22th April 2022 admitted to Al-Mishkhab hospital. Laboratory tests showed normal count of WBC and platelet, blood sample was sent to central lab. In Baghdad for confirmation of the disease and the result was negative.

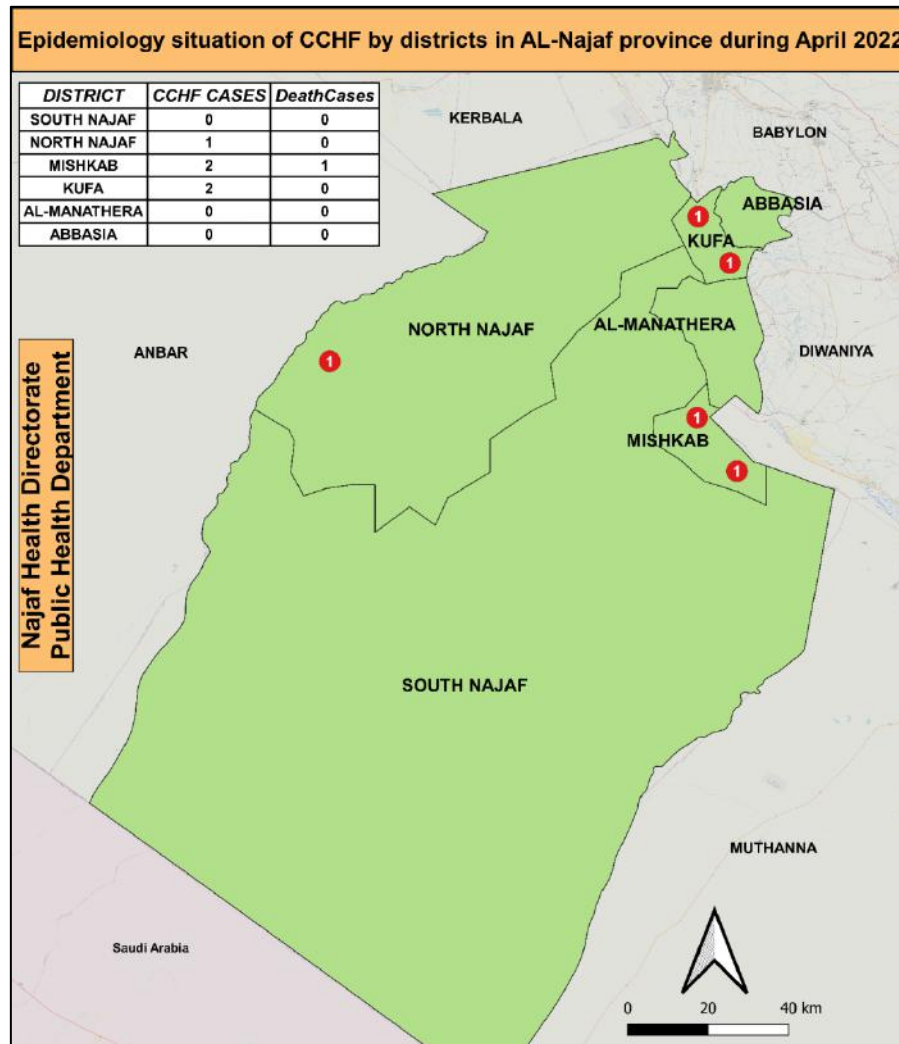
### **Case 4**

On 30th April 2022, a fourth suspect case, 30 years old female was admitted to Al-Furat AL-Awsat hospital in Kufa district with a sudden onset of fever, vomiting, generalized body pain, with hematuria, after two days, patient had bleeding from the injection site and bleeding under the skin. No history of contact with animals. Serologic testing was conducted for confirmation by taking blood sample from the patient and sending it to the central laboratory in Baghdad, and the result was negative.

### **Case 5**

On 29th April 2022, a fifth suspect case, 16 years old male, he lived in a rural area (AL-Haydria area) in the North-Najaf district he was presented with a sudden onset of fever, vomiting, generalized body pain, gums bleeding, and bleeding under the skin. He had

history of contact with animals. Laboratory tests showed normal count of WBC and platelet. Serologic testing was conducted for confirmation by taking blood sample from the patient and sending it to the central laboratory in Baghdad, and the result was negative. Distribution of cases across the districts of Najaf province is shown on the map below.



### 3. DISCUSSION :

Our case series compiles summaries of 5 suspected Hemorrhagic fever cases with no reporting of any confirmed case and all lab tests were negative for the suspect cases except one case not able to get blood because he came late to hospital and died. Lessons learned from this study, the first lesson to be derived are that late diagnosis decreases the efficacy of treatment and aggravates the outcome of the disease. Diagnosis of CCHF is important to

prevent the spread of CCHF virus among the health-care workers and relatives of patients. Treatment with ribavirin may be useful if given within the early stage of disease. The second lesson to be learned from this study is that every febrile hemorrhagic syndrome encountered in endemic areas with thrombocytopenia especially if the patient has history of contact with animals, should probably be considered to be viral hemorrhagic fever, until proven otherwise. The third lesson to be learned about the availability of diagnostic services for CCHF, only one lab. In Baghdad is capable of diagnosing CCHF. However, sending specimens to this facility from all hospitals in Iraq is costly and the lack of monetary resources so we need to increase the lab. For the confirmation of CCHF.

#### **4. Conclusions:**

This study highlights the importance of early clinical suspicion of CCHF and gives alarm to appearance of CCHF cases especially among butchers and those who live in rural area especially those who work in agriculture and raising animals.

#### **5. Recommendations:**

To avoid outbreaks and overcome the described challenges, awareness of the disease should be raised in health care personnel, including in areas where CCHF has not been described before. Additionally, clinicians should be informed about the likelihood of atypical presentations in CCHF. Concomitantly, specimen transfer and diagnostics need to be facilitated and the use of protective measures should be enforced as long as the diagnosis is unclear. Similarly, the communities which are at risk of contracting CCHF should be sensitized about the disease, its transmission, and prevention. This can be done through mass campaigns using electronic, print, and social media. It underlines the importance of early clinical suspicion of this rare but dangerous disease when diagnostic possibilities are far off and doctors may have to rely on basic examination and clinical experience. It also presents how traditional habits, such as unprotected slaughtering of cows in groups or religious ceremonies influence disease dissemination and outcome.

**Ethical Clearance** : Ethical clearance and approval of the study are ascertained by the authors. All ethical issues and data collection were in accordance with the World Medical Association Declaration of Helsinki 2013 of ethical principles for medical research involving human subjects. Data and privacy of patients were kept confidentially.

**Conflict of interest:** Authors declared none

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## **REFERENCES**

1. Alsaadi, K.S., et al., *Crimean-Congo Hemorrhagic Fever Outbreak in the North Region of Oman in August 2019: Case Series Study. Iproceedings*, 2022. 8(1): p. e36495.
2. Rehman, K., et al., *Outbreak of Crimean-Congo haemorrhagic fever with atypical clinical presentation in the Karak District of Khyber Pakhtunkhwa, Pakistan. Infectious diseases of poverty*, 2018. 7(06): p. 59-64.
3. World health organization. *Crimean-Congo Hemorrhagic Fever (CCHF)*. 2022 [cited 2022 5/6/2022]; Available from: <https://www.who.int/news-room/fact-sheets/detail/crimean-congo-haemorrhagic-fever>.
4. Al-Abri, S.S., et al., *Current status of Crimean-Congo haemorrhagic fever in the World Health Organization Eastern Mediterranean Region: issues, challenges, and future directions. International journal of infectious diseases*, 2017. 58: p. 82-89.
5. centers for disease control and prevention. *Crimean-Congo Hemorrhagic Fever (CCHF)*. 2022 [cited 2022 5/6/2022]; Available from: <https://www.cdc.gov/vhf/crimean-congo/symptoms/index.html>.