

CCHF: An Overview

Akash Thakor, Bhavesh Pandor, Bhoomi Taral, Tapan Kumbhani

Department of Veterinary Microbiology, Kamdhenu university, Dantiwada-385506

Department of Livestock Products Technology, Kamdhenu University, Anand-388110

Department of Veterinary Pathology, Kamdhenu university, Dantiwada-385506

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Abstract

Crimean-Congo hemorrhagic fever (CCHF) is caused by infection with a tick-borne virus (Nairovirus) in the family Bunyaviridae. The disease was first characterized in the Crimea in 1944 and given the name Crimean hemorrhagic fever. It was then later recognized in 1969 as the cause of illness in the Congo, thus resulting in the current name of the disease. Crimean-Congo hemorrhagic fever is found in Eastern Europe, particularly in the former Soviet Union, throughout the Mediterranean, in northwestern China, central Asia, southern Europe, Africa, the Middle East, and the Indian subcontinent.

Introduction

Etiology and host

It is tick borne virus belongs to family *Bunyaviridae*. The principal reservoir host and vector of CCHF are ticks of the genus *Hyalomma*.

Transmission

Hyalomma, are reservoir and a vector for the CCHF virus. Wild and domestic animals, such as cattle, goats, sheep serve as amplifying hosts for the virus. Transmission to humans occurs through contact with infected ticks or animal blood. CCHF can be transmitted from one infected human to another by contact with infectious blood or body fluids.

Disinfection

CCHF virus inactivated by many disinfectants including 1% hypochlorite, 70% alcohol, hydrogen peroxide, acetic acid, glutaraldehyde and formalin. It can also be destroyed by UV light or pH < 6. One study found that heating at 56°C (133°F) for 30 minutes virus can be destroyed.



Clinical sign in animals

CCHF virus infect animals with few or no clinical signs. No illnesses have been recorded to this virus in naturally infected animals.

Clinical sign in humans

Abrupt onset fever, chills, shudders, myalgia, headaches, sicknesses and vomits, abdominal pain, arthralgia. After a few days bleeding from mucous membranes, hematomas, ecchymosis, melena, hematuria, nose bleeding, vaginal bleeding, bradycardia, thrombocytopenia, leukopenia.

Laboratory diagnosis of CCHF

- Reverse transcriptase polymerase chain reaction (RT-PCR) assay
- IgG and IgM antibodies enzyme-linked immunosorbent assay (ELISA)
- Antigen detection tests
- Virus isolation by cell culture

Prevention and Control

- Avoid tick-infested areas.
- Wear light colored clothing for easy finding of ticks on clothes.
- Wear protective clothing
- Use chemical repellent with DEET (on skin) and acaricides (tick killer) on boots and clothing
- Avoid contact with infected CCHF patients and deceased.
- Wash hands regularly with soap and water.
- Encourage early treatment in CCHF Treatment Center.
- Use gloves and mask and practice hand-hygiene when caring for suspected CCHF patient at home.
- Use acaricide (tick killer) in farms and livestock production facilities to decrease tick infestations on animals or in stables/barns.
- Wear mask, gloves and gowns when slaughtering and butchering animals

Treatment

Treatment is mainly supportive. Seriously ill patients require intensive care. Ribavirin has been widely used to help treat Crimean-Congo hemorrhagic fever

Public health importance

Sheep and cattle are viremic for up to about a week, and often exposure to ticks and virus infection occurs at an early age.



Farmers may castrate, dehorn, attach ear tags or immunize the young animals, and thus expose themselves through getting infected blood onto broken skin.

Primary hazards: Droplet exposure of the mucous membrane to infective blood; aerosols; accidental parenteral inoculation. Ticks that detach from hides and skins at slaughterhouses, after their engorgement has been so rudely interrupted, will sometimes attach to whatever is available, and this constitutes another hazard for abattoir workers

References

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