

## Letter to Editor

# Crimean-congo hemorrhagic fever: treatment and control strategy in admitted patients

### Sir

Crimean-Congo Hemorrhagic Fever (CCHF) is an acute, tick-borne viral, zoonotic disease with hemorrhagic manifestations and considerable mortality in humans. It was first observed in Crimea in 1944 and was first isolated in Africa (Congo) from a febrile patient in 1956. The virus is widely distributed around the world (1, 2).

CCHF is caused by an RNA virus. This virus has been classified as a Nairovirus genus from the family of Bunyaviridae (3). Clinical features usually include a rapid progression characterized by hemorrhage, myalgia and fever (2, 3).

Sheep, goats and cattle develop high titers of virus in blood, but tend not to fall ill. Humans are usually infected with CCHF virus through a tick bite but in some special areas, which shepherding is one of the most common jobs, the route of contamination could be different. People who work with livestock, animal herders and slaughterhouses workers are at risk of CCHF infection (3-5).

CCHF cases occurring as an expected event in endemic areas should notify the clinicians in the international neighborhood. They should be aware of the probability of the importation of CCHF cases from endemic areas in the nosocomial setting, and of the potential transmission of the virus via tick-infested and infected imported livestock. Blood and secretion of the infected patients can spread the infection so, the medical laboratory staffs and health-care workers are another high-risk group. There are epidemiological differences in CCHF transmission in the different parts of the world (3-5).

Studies about pathogenesis of CCHF reveal endothelial damage resulting from either direct infection of the cells and indirect effect of viral and host factors<sup>[3,4]</sup>. The nature of viral disease like CCHF is nonstop, progressive and/or self-limited; so intensive care and patient physiology play an important role in the outcome of the patient. CCHF is an acute infection without any long-term sequelae or disability, the only relevant outcome is survival.

Treatment for CCHF is primarily supportive and pharmaceutical options for CCHF treatment are limited (2, 3,

7). CCHF patients need careful attention to the fluid and electrolyte balance, ventilation support for enough oxygenation, mild sedation and hemodynamic support depending upon the situation at the early stages of the disease in early stage of the disease presentation. Delay in the diagnosis and supportive care decreases the efficacy of treatment and aggravates the outcome of the disease.

Some of the patients needed preparations of erythrocytes, platelets, and fresh frozen plasma, depending on their homeostatic state. Replacement therapy with blood products, according to the results of the complete blood count, is indispensable in the management of severe CCHF cases.

Ribavirin (a synthetic purine nucleoside analogue) has been shown to inhibit viral replication of the CCHF virus in vitro (7). The World Health Organization (WHO) currently recommends the administration of ribavirin, oral or intravenous as a potential therapeutic drug for CCHF, but its efficacy in the treatment is controversial and some studies have shown that oral ribavirin treatment in CCHF patients do not affect on viral load or disease progression (2, 6, 7). Based on our observation, ribavirin prescription in early diagnosed patients had been associated with higher survival rates, shorter recovery time, and earlier return to normal levels of laboratory parameters (2). Treatment with ribavirin in suspected cases and post exposure prophylaxis for healthcare workers potentially exposed to CCHF virus should be considered (8).

According to the clinical responses that were seen in most of the patients who were prescribed with ribavirin accompanied with corticosteroids for treatment or prophylaxis, it could be concluded that this strategy could be considered as a standard treatment or prophylactic protocol (2, 5-7).

We believe a real uncertainty exists over the benefit of intensive care unit preparation for the treatment of CCHF, accompanied with intravenous ribavirin and corticosteroids prescription (3, 7). Intensive care for the admitted patients on one hand, improves the patient's outcome and on the other hand it has a major role in disease control because treatment

protocols and protection strategies in intensive care unit is more sophisticated.

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