

EDITORIAL

CRIMEAN CONGO HEMORRHAGIC FEVER: A LOOMING THREAT

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Eid al Adha during CCHF transmission season poses a threat of exposing large population to this viral haemorrhagic fever. CCHF was first reported in Crimea in 1944. Oral ribavirin and general supportive therapy is the mainstay of treating CCHF case. Eid al Adha is a unique epidemiological event which shifts the risk of CCHF infection from high risk population to general population. During Eid, the prevention efforts must focus on reducing the risk of tick to human transmission, animal to human transmission and control of CCHF in animals and ticks

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With approaching Eid al Adha, the threat of Crimean Congo Hemorrhagic Fever (CCHF) is looming over a large population across Muslim world. CCHF is a viral hemorrhagic fever caused by a tick-borne Nairovirus.¹ This virus is highly pathogenic with a case fatality rate of up to 50%.²

Crimean Congo Hemorrhagic Fever was first reported in Crimea in 1944 and was labeled as Crimean hemorrhagic fever. Subsequently in 1969, similar disease was reported in Congo and thus resulting in its current name: 'Crimean-Congo hemorrhagic fever.'³ CCHF is endemic in Asia, Africa, Balkans, throughout the Mediterranean and Middle East⁴ with ever expanding geographical distribution. This expansion can be attributed to movement and transportation of infected or tick infested livestock and birds. In Pakistan, CCHF was first reported in 1976 and since 2000; the number of cases has shown an exponential rise with 50–60 annually reported cases mostly from Balochistan and Khyber Pakhtunkhwa provinces.⁵

Animals play a critical role in the life cycle of CCHF virus. The animal host of virus includes a wide range of domestic and wild animals like cattle, sheep and goats. CCHF virus has also been reported in some birds, most notably in ostriches.⁶

Humans are considered as the dead host for the CCHF virus. The virus is transmitted to the humans through its reservoir and vector, i.e., Hyalomma tick. In addition to transmission through its vector, CCHF virus can be transmitted through carcasses and body fluids of infected humans and animals. This horizontal transmission to the humans occurs mostly during fall and spring seasons.⁵

Once the virus is transmitted to humans, it incubates for 3–7 days, beginning its first stage of disease in human body. Length of the incubation period is dependent upon the mode of viral transmission. 1–3 days after infected tick bite and 5–6 days following contact with infected tissues or blood.⁵

The disease has a sudden onset. The first of symptomatic phases, the pre-hemorrhagic phase usually lasts 5 days and is characterized by myalgia, headache,

high grade fever, nausea, vomiting, abdominal pain and hypotension.⁷ As the disease progresses, hemorrhagic phase ensues with appearance of petechiae, ecchymosis epistaxis, and other hemorrhagic phenomenon.⁸ Patients usually develop hepatitis, and in some cases multi organ failure is reported after the fifth day of illness. The convalescent phase in survivors begins after 10–20 days with complete recovery requiring a complete year.³

Although a lot of work has been done on the development of vaccine against CCHF, yet, currently there is no effective vaccines available.⁹ Ribavirin, which is an anti-RNA virus inhibitor, is the only therapeutic and prophylaxis option available that has demonstrated significant efficacy against CCHF. With ribavirin, the patients (whether male or female) are advised to absolutely prevent pregnancy within 6 months of completing treatment.¹⁰ Along with antiviral, general supportive therapy is the mainstay for effective management of the patients. New options are being explored for treatment and prophylaxis of CCHF. Interferons- α has shown promising results against CCHF virus in vitro and is currently being considered as alternative treatment approach.¹¹ Having said that, with high case fatality rate even with treatment, prevention is the most feasible and appropriate approach to reduce morbidity and mortality from CCHF.

As is the case with other vector-borne diseases, the ecology of CCHF virus, its reservoir and vector predisposes certain group of people to CCHF infection. Most of these high risk individuals in endemic areas are those who are susceptible to bite from ticks belonging to Hyalomma species. High risk group include individuals working in agriculture fields, people working in animal sheds and barns, butchers, individuals working in tannery industry.¹² The other well documented risk group include those who are caring for CCHF patients, both attendants and health care staff and lab staff working with virus.

Eid al Adha is a unique epidemiological event which shifts the risk of CCHF infection from high risk population to general population. This shift is attributed to the fact that general population come in close contact

with tick infested animal and body fluids and carcasses of infected animal during purchase, distribution and butchering to fulfill their religious obligation.

To this address epidemiological shift during Eid al Adha, the prevention efforts must focus on reducing the risk of tick to human transmission, animal to human transmission and control of CCHF in animals and ticks in addition to routine CCHF preventive measures.¹³ (Figure-1)

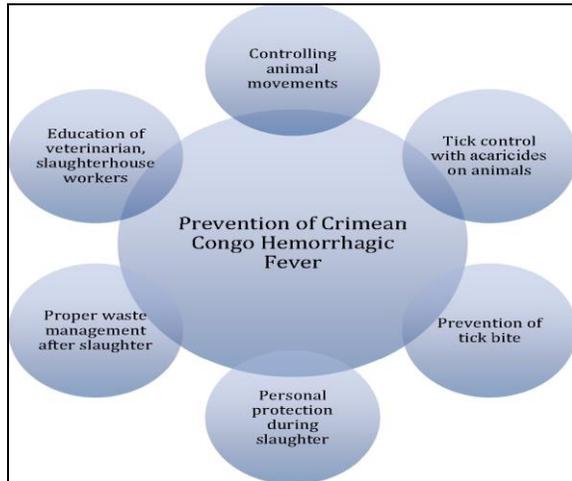


Figure-1: Components of CCHF prevention¹³

Control of CCHF in animals and ticks can be difficult due to abundance and widespread tick population in endemic areas and asymptomatic infection in animals. Fourteen days of animal quarantine and use of Acaricides for tick control to prevent both vertical and horizontal transmission in vector and animals can be a logistic nightmare and not cost effective. The only realistic options that remain are to prevent tick to human transmission by educating people to wear light color clothes with long sleeves and trousers, use of repellents such as DEET and to avoid tick habitat but if that's not possible Permethrin laced clothes can be worn to prevent tick bite. If a tick attaches to the body, it should only be removed with fine-tipped tweezers avoiding crushing in the process and bite area must be sanitized by washing with soap water and applying antiseptic to the area.¹ The other option is to prevent animal to human transmission by employing safe butchering practices and proper animal waste disposal mechanisms.

In addition to personal protective measures

during Eid, the government needs to implement policies to control inter country and intra country animal movements from endemic to non-endemic regions and to regulate establishment of livestock markets.

Given that these measures are difficult to implement due to the magnitude of the Eid and number of sacrificial animal involved, strategies must be developed to improve CCHF surveillance, improve lab capacities for diagnosis and generate awareness among general population and health care providers regarding risk factors and prevention.

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