Pakistan is faced with a quadruple disease burden that comprises communicable, non-communicable, mental health and accidents. In addition, several emerging healthcare related challenges are putting increased burden on limited healthcare related resources available in the country. Crimean-Congo Haemorrhagic Fever (CCHF) is one such example. The major reservoirs of this infection are both wild and domestic animals. It is a tick-borne zoonotic disease caused by a virus that has surfaced in Asia, Europe, Africa, and the Middle East. CCHFVs are classified into 7 genotypes (Asia-1, Asia-2, Euro-1, Euro-2, Africa-1, Africa-2, and Africa-3) on the basis of genetic variation.

In Pakistan, the first CCHF case was reported in 1976; multiple sporadic cases and outbreaks have occurred in subsequent years. An additional 14 outbreaks were reported during 1976 - 2010 period. An increase in incidence of this disease in Pakistan has been reported in recent years. Infections usually occur as sporadic cases, mostly in rural areas, and are caused by the bite of a virus-infected tick. CCHF can also occur resulting from contact with the blood of infected animals, principally among abattoir workers. Person-to-person transmission can occur through contact with the virus-containing body fluids of a patient.

The course of CCHF can be divided into incubation, pre-haemorrhagic, haemorrhagic and convalescent phases. Following a tick bite, incubation period ranges from 1 - 5 days, while it is usually 5 - 7 days after contact with infected blood or tissues. Patients show a sudden onset of fever, accompanied by weakness, headache and muscular pain, vomiting, marked hyperemia of the face and oropharynx, a haemorrhagic rash with development of ecchymoses and bleeding from the nasopharynx, gastrointestinal tract and other sites. There is leukopenia initially, with thrombocytopenia during the first week of illness. Coagulation abnormalities develop with progressive hepatic involvement resulting in increased levels of liver-associated enzymes, Blood Urea Nitrogen (BUN) and creatinine; which provide a measure of renal insufficiency. A specific diagnosis may be made by testing a serum specimen for viral RNA by PCR techniques and for virus-specific IgM and/or IgG by ELISA or other methods.

Most CCHF infections are either asymptomatic or result in a non-specific febrile illness which does not require hospitalization or specific therapy. In the small percentage of patients, who develop hypotension and haemorrhage, current medical management is largely supportive. The fall in blood pressure and diminished organ perfusion that result from increased vascular permeability, call for volume replacement, usually with intravenous fluids, or with careful monitoring to prevent the development of pulmonary edema. Coagulation abnormalities may be countered through the provision of fresh frozen plasma and platelets, while the occurrence of significant haemorrhage will require blood transfusion. Ribavirin is beneficial, so long as it is initiated early in the course of illness. Attempts are being made to develop a vaccine for prevention of CCHF.

In this issue, JCPSP is publishing a study that aims to support development of synthetic peptide vaccine against CCHF virus through identification of HLA class I binder epitopes from M segment glycoprotein precursor of the virus. HLA specific glycoproteins epitope prediction can help identify synthetic peptide vaccine candidates. This offers hope to the clinicians that effective vaccine for prevention of CCHF will be available in the near future.

There is also a case report in this issue of a CCHF patient who recovered on the basis of maintaining high index of suspicion, early diagnosis and treatment. It also highlights the importance of preventive measures taken by the hospital staff to protect others from getting infected. These are some of the important aspects that have practical implications for prevention of CCHF among healthcare providers in addition to early diagnosis and treatment of CCHF cases that result in reduced morbidity and mortality from this deadly disease.

Because of high mortality associated with CCHF, prevention is the most important measure to control CCHF infection. Those working with animals should use insect repellent on exposed skin and clothing. Wearing gloves and other protective clothings are recommended. Individuals should also avoid contact with the blood and
body fluids of livestock or humans who show symptoms of infection. It is important for healthcare workers to take proper infection control precautions to prevent occupational exposure.

Currently, there is no safe and effective vaccine available for human use. Further research is needed to develop these potential vaccines as well as determine the efficacy of different treatment options including ribavirin and other antiviral drugs.

Crimean-Congo haemorrhagic fever is a serious public health problem that requires efforts from all stakeholders to control it from further spreading through maintaining high index of suspicion, early diagnosis and initiation of treatment along with a strong focus on prevention.

REFERENCES