Joint UKBTS Professional Advisory Committee ([1])

Position Statement

Ebola virus

November 2017

Approved by: Standing Advisory Committee on Transfusion Transmitted Infections

***November 2017* - The contents of this document are believed to be current. Please continue to refer to the website for in-date versions.**

Background

Ebola virus is one a group of viruses that cause viral haemorrhagic fever. It was first identified in 1976 in what is now the Democratic Republic of the Congo. The associated illness is referred to as Ebola virus disease (EVD).

EVD is a serious acute illness. The average case fatality rate is approximately 50%, but may vary from 25-90% depending on the level of available supportive care, the patient's immune response, and the particular strain of Ebola virus in question.

EVD is a zoonosis. Humans are not the natural reservoir for any of the haemorrhagic viruses, and although not yet proven, fruit bats are thought to be the natural Ebola virus hosts. Transmission between the natural reservoirs and humans is rare, infection only occurring through contact with the blood or other body fluids of infected animals. Outbreaks of EVD are often traceable to a single case where an individual has handled the carcass of an infected animal - a primate, fruit bat, antelope or other infected creature found in the rainforest. The virus is geographically restricted to the endemic areas where its host species reside. Occasional cases have been reported outside Africa – these are usually healthcare/laboratory acquired or associated infections.

Since 1976 there have been over 20 recorded outbreaks of EVD, mainly in Central Africa (Democratic Republic of the Congo 2017, 2014, 2012), Uganda (2011, 2012). The West African EVD outbreak in 2014-15 centred on Sierra Leone, Guinea and Liberia, and has been the largest outbreak yet. The global response, however, providing multi-national support and intervention, contained the outbreak within just a relatively small number of bordering countries in the region. Outbreaks generally occur sporadically and irregularly, and cannot be predicted. However, these outbreaks have largely been contained and controlled because they occurred either in less populated areas where isolation of infected individuals was possible, or for individual cases imported into countries with developed healthcare systems, full isolation of the patients was possible.

Onward human to human transmission of Ebola virus only occurs through direct contact with blood or body fluids from an infected individual, either directly or indirectly via, for example, soiled clothing or bedding. Although transfusion-transmission is theoretically possible, at this time there have not been any reports of cases in affected countries. Asymptomatic viraemia has not been described; it would be expected that an infected and infectious donor would be symptomatic and thus unlikely to donate. Transmission is seen frequently within families, within hospitals, and during some mortuary rituals where contact among individuals becomes more likely. Close contact with infected patients and their body fluids puts healthcare workers at a high risk of infection and appropriate procedures, including personal protective equipment, must be used to ensure their protection. Ebola virus nucleic acid has been found to persist in semen for over a year after cessation of viraemia. However, only a

small number of possible cases of sexual transmission have been reported. Transmission through food (with the possible exception of bushmeat) and water does not occur. Outside of controlled laboratory experiments, spread of Ebola via aerosols is very rare.

Although there is no specific proven treatment, EVD is managed with good supportive care: early intervention with rehydration, maintaining oxygen status and blood pressure all increase the probability of survival. Clinical trials evaluating potential vaccines are underway and a number of experimental treatments are also under investigation, including the use of humanised monoclonal antibodies against Ebola and immune plasma from infected and recovered individuals.

Although countries with Ebola virus outbreaks are generally not major tourist destinations, travel to and within these countries does occur, and there may be some migration to the UK and other European countries. Ebola virus outbreaks, excepting any potential person to person transmission in a healthcare setting when an infected individual has been moved to a non-affected country for treatment, have been identified only in countries that are also malarious. Therefore, all individuals who have been in affected areas will be excluded from blood or tissue donation for six months after their return to the UK under current UK donor/donation malaria guidelines. Individuals who have ever been infected with Ebola virus are permanently excluded from donating, with the exception of those who are donating immune (convalescent) plasma for therapeutic use on patients with EVD. Contacts of those who have been infected with Ebola will be excluded for 6 months from last contact.

Convalescent (immune) plasma

As with many viral infections, those who recover from EVD develop antibodies which then may confer a degree of protection against further exposure to Ebola virus. One of the Ebola treatment approaches has been the infusion of plasma from recently infected and recovered individuals: convalescent or immune plasma. In theory, the antibodies present in the plasma would neutralise virus circulating in an infected individual, helping to reduce viral load and consequently reduce the load on the individual's immune system, with the overall aim of helping to ensure recovery. Individuals who have been laboratory proven to have been recently infected and recovered from EVD may be eligible to donate immune/convalescent plasma for use in the treatment of individuals with EVD.

Countries affected by Ebola virus are shown in the Geographical Disease Risk Index (GDRI) and any associated Change Notifications.

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