

DEFINITION OF MARBURG HEMORRHAGIC FEVER (MHF)

Marburg hemorrhagic fever is a rare, severe type of hemorrhagic fever which affects both humans and non-human primates. Caused by a genetically unique zoonotic (that is, animal-borne) RNA virus, recent scientific studies implicate that the African fruit bat (*Rousettus aegyptiacus*) is the reservoir host of the Marburg virus. MHF is a viral hemorrhagic fever and a severe and highly fatal disease caused by a virus from the same family as the one that causes Ebola hemorrhagic fever. These viruses are among the most virulent pathogens known to infect humans. Both diseases are rare, but have a capacity to cause dramatic outbreaks with high fatality.

CAUSES, INCIDENCES, AND RISK FACTORS

Just how the animal host first transmits Marburg virus to humans is unknown. However, as with some other viruses which cause viral hemorrhagic fever, humans who become ill with Marburg hemorrhagic fever may spread the virus to other people. This may happen in several ways. People who have handled infected monkeys and have come in direct contact with their fluids or cell cultures, have become infected. Spread of the virus between humans has occurred in a setting of close contact, often in a hospital. Droplets of body fluids, or direct contact with persons, equipment, or other objects contaminated with infectious blood or tissues are all highly suspect as sources of disease.

People who have close contact with human or non-human primates infected with the virus are at risk. Such persons include laboratory or quarantine facility workers who handle non-human primates that have been associated with the disease. In addition, hospital staff and family members who care for patients with the disease are at risk if they do not use proper barrier nursing techniques.

Confirmed cases of MHF have been reported in:

- Uganda
- Zimbabwe
- Democratic Republic of the Congo
- Kenya
- Angola

SYMPTOMS

Illness caused by Marburg virus begins abruptly, with severe headache and severe malaise. Many patients develop severe hemorrhagic manifestations between days 5 and 7, and fatal cases usually have some form of bleeding, often from multiple sites. *The Marburg virus is transmitted by direct contact with the blood, body fluids and tissues of infected persons.*

After an incubation period of 5-10 days, the onset of the disease is sudden and is marked by fever, chills, headache, and myalgia. Around the fifth day after the onset of symptoms, a maculopapular rash, most prominent on the trunk (chest, back, stomach), may occur. Nausea, vomiting, chest pain, a sore throat, abdominal pain, and diarrhea then may appear. Symptoms become increasingly severe and may include jaundice, inflammation of the pancreas, severe weight loss, delirium, shock, liver failure, massive hemorrhaging, and multi-organ dysfunction.

PREVENTION

Due to limited knowledge of the disease, preventative measures against transmission from the original animal host have not yet been established. Measures for prevention of secondary transmission are similar to those used for other hemorrhagic fevers. If a patient is either suspected or confirmed to have Marburg hemorrhagic fever, barrier nursing techniques should be used to prevent direct physical contact with the patient. These precautions include wearing of protective gowns, gloves, and masks; placing the infected individual in strict isolation; and sterilization or proper disposal of needles, equipment, and patient excretions.

TREATMENT

A specific treatment for this disease is unknown. However, supportive hospital therapy should be utilized. This includes balancing the patient's fluids and electrolytes, maintaining their oxygen status and blood pressure, replacing lost blood and clotting factors and treating them for any complicating infections.

Sometimes treatment also has used transfusion of fresh-frozen plasma and other preparations to replace the blood proteins important in clotting. One controversial treatment is the use of heparin (which blocks clotting) to prevent the consumption of clotting factors. Some researchers believe the consumption of clotting factors is part of the disease process.

This disease can be fatal. The case-fatality rate for MHF is between 23-90%.