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NEWSLETTER

MARBURG VIRUS DISEASE UPDATE

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Between February and March 2023, two Sub-Saharan African countries, Equatorial Guinea and Tanzania, reported the first case of Marburg virus disease, with a case fatality rate of more than 60%^{1,2}. Because these are the countries that have never had any previous cases despite being in endemic areas, it may be a wake-up call to renewed interest in filoviruses, providing an unprecedented impetus to the development of new therapeutics and vaccines for this highly lethal infection^{3,4}.

This event highlights the ongoing risk that Marburg virus disease may pose to the community.

Epidemiology

- Marburg virus disease (MVD) is a rare but highly infectious disease caused by the Marburg virus, which is a member of the Filoviridae family. The virus was first **identified in 1967 during an outbreak in Marburg**, Germany, and has since been associated with sporadic outbreaks in sub-Saharan Africa (Table 1)³.
- The epidemiology of MVD is characterized by sporadic outbreaks, with the majority of cases occurring in sub-Saharan Africa. Outbreaks of the disease are **often associated with the handling of infected animals**, such as fruit bats and primates, or with contact with bodily fluids of infected humans⁴
- The **incubation period of Marburg virus disease is typically 5-10 days**, with symptoms appearing suddenly and progressing rapidly. The disease is highly infectious and can be transmitted through close contact with infected individuals or their bodily fluids, such as blood, saliva, and vomit.
- The **mortality rate for Marburg virus disease is high, ranging from 24% to 88%**, depending on the outbreak and the quality of care received by the patient. There is currently no specific treatment for the disease, and supportive care is the mainstay of treatment⁵.

Prevention

Preventing the spread of Marburg virus disease involves early identification of cases, isolation of infected individuals, and implementation of infection prevention and control measures. These measures **include the use of personal protective equipment**, such as gloves, masks, and gowns, and the implementation of strict hygiene measures, such as handwashing and disinfection of surfaces.

Table 1. Outbreaks of Marburg virus disease³

Year	Country	Virus strain	Cases	Deaths	CFR (%)
1967	Germany	MARV	31	7	23
1975	South Africa	MARV	3	1	33
1980	Kenya	MARV	2	1	50
1987	Kenya	RAVV.	1	1	100
1990	Russia	MARV	1	1	100
1998-2000	Democratic Republic of Congo	MARV	154	128	83
2004-2005	Angola	MARV	252	227	90
2007	Uganda	MARV	3	1	33
2008	USA (From Uganda)	MARV	1	0	0
2008	Netherlands (From Uganda)	MARV	1	1	100
2012	Uganda	MARV	15	4	27
2014	Uganda	MARV	1	1	100
2017	Uganda	MARV	4	3	75
2021	Guinea	MARV	1	1	100
2022	Ghana	MARV	3	2	75
2023	Equatorial Guinea	MARV	9	7	75
2023	Tanzania	MARV	8	5	63

It is important to note that not everyone who comes into contact with the virus will develop symptoms of the disease, and some individuals may be able to carry and transmit the virus without showing any symptoms.

To prevent the transmission of Marburg virus disease, it is important to practice good hygiene, wear personal protective equipment when caring for infected individuals, and avoid contact with infected animals or their bodily fluids. It is also important to promptly identify and isolate cases of the disease to prevent further spread of the virus.

Potential risk for transmission

Exposure to Marburg virus disease is a potential risk for individuals and groups travelling to or from outbreak regions. **The degree of risk varies according to the area/s visited and duration of stay.**

The Marburg virus disease (MVD) is **transmitted through contact with the bodily fluids of infected individuals or animals, such as blood, saliva, vomit, urine, faeces, or breast milk.** Therefore, anyone who comes into contact with an infected individual or animal is at risk of acquiring the disease.

The virus is highly infectious, and there are several potential routes of transmission:

- **Contact with infected animals:** Marburg virus is commonly found in fruit bats and other wild animals, and people can be infected by coming into contact with these animals or their bodily fluids.
- **Direct contact with bodily fluids:** The virus can be transmitted through direct contact with the bodily fluids of infected individuals, such as blood, vomit, and saliva. Healthcare workers and family members of infected individuals are at high risk of infection.
- **Contact with contaminated surfaces or objects:** The virus can survive for several days on surfaces or objects contaminated with bodily fluids, and people can be infected by touching these surfaces or objects and then touching their eyes, nose, or mouth.
- **Airborne transmission:** Although rare, there is evidence to suggest that Marburg virus can be transmitted through the air in certain circumstances, such as during medical procedures that generate aerosols.
- **Sexual transmission:** There have been reports of sexual transmission of the virus, although this appears to be rare.

Diagnosis and Management

Diagnosis of Marburg virus disease (MVD) can be challenging, as the symptoms can be similar to other viral infections, such as **Ebola virus disease**. A diagnosis of MVD is typically confirmed by laboratory testing of blood, urine, or other bodily fluids to detect the presence of the virus.

There is currently no specific treatment for MVD, and supportive care is the mainstay of treatment. This includes managing the symptoms of the disease, such as fever, dehydration, and bleeding, and providing supportive care, such as fluids, electrolytes, and blood transfusions.

In addition to supportive care, there are several experimental treatments that are being studied for the treatment of MVD, such as monoclonal antibodies, antiviral drugs, and convalescent plasma. These treatments are not yet approved for use in the general population and are only available in the context of clinical trials or under compassionate use protocols.

MANAGEMENT OF MVD ALSO INVOLVES INFECTION PREVENTION AND CONTROL MEASURES TO PREVENT THE SPREAD OF THE VIRUS.

Management of MVD also involves infection prevention and control measures to prevent the spread of the virus.

This includes isolating infected individuals, using personal protective equipment, such as gloves, masks, and gowns, and implementing strict hygiene measures, such as handwashing and disinfection of surfaces.

It is important to note that early identification and prompt treatment of MVD can improve the chances of survival. Therefore, anyone who suspects they may have been exposed to the virus should seek medical attention immediately.

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