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MONKEY POX — A SERIOUS THREAT OR NOT, AND WHAT ABOUT EMS?

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Both the monkeypox and smallpox viruses are members of the Poxviridae virus family, although the smallpox virus is no longer seen in the environment. The monkeypox virus was found in Africa in the 1950s, and the first human cases were detected 20 years later [1]. This happened to be around the same time as smallpox vaccines were stopped. In 2003, the first outbreak outside of Africa occurred in the United States [2]. Although squirrels, rats, and opossums are the virus's principal reservoirs, but the term stems from the fact that the earliest human infections occurred after interaction with monkeys. There are at least two genotypes of the virus: one that is found in Central Africa and has been linked to human transmission; the other is found in West Africa and is not passed from person to person, causing minor sickness [3]. Monkeypox infection can occur as a result of direct contact with animals, people, or virus-contaminated items. The virus enters the body through wounds on the skin, the respiratory tract, or the mucous membranes. The monkeypox virus does not spread through the air like the flu or SARS-CoV-2. It is quite improbable that EMS personnel would come across a monkeypox patient during normal operations. Whether EMS suspect monkeypox, contact your state health agency to see if specific pathogen transfer methods may be implemented. EMS Personnel managing patients suspected of infection with monkeypox should be retained similar to the COVID--19 pandemic. To guard against the possibility of airborne transmission, EMS personnel should strictly adhere to the standard, contact, and airborne precautions. This includes a NIOSH-approved, fit--tested N-95 respirator, gown, gloves, and eye protection with a face shield or goggles. Monkeypox symptoms are similar but less severe than in smallpox. The sickness takes between 6 to 13 days to incubate, although it can take from 5 to 21 days. A high temperature and swollen lymph nodes are the first signs. A rash emerges on the skin and mucous membranes of the mouth after around 2 days. The rash spans the entire body in more severe cases; initially, they are patches that evolve into vesicles. The condition normally takes 2–4 weeks to develop. Scars emerge once the healing vesicles' scabs come off, and they can endure for years. Medical personnel should pay close attention to the patient and, if tolerated, use a surgical mask or consider covering the patient with an impermeable sheet if a rash is evident. If the patient is proven to have Monkeypox, monitor workers for signs and symptoms of the disease for 21 days following transfer. Monkey pox infection has no particular therapy at this time; most cases recover on their own. There is concern about the growing incidence of monkey pox transmission in rural Africa, with the Democratic Republic of Congo reporting over 4500 cases in 2020 and informing

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about 3000 cases in 2021 [4]. Similarly, the number of instances of the disease has increased in Nigeria. Currently, in Europe, according to a tracker by a University of Oxford academic, there are already over 439 (data as of May 27, 2022) confirmed or suspected monkeypox cases in Europe and US, and this list is constantly growing at a fairly rapid rate every day [5]. The virus is spreading across Europe, particularly in England, Portugal, and Spain. Last week, cases were verified in Sweden, Italy, Belgium, the Netherlands, Germany, and in substantial numbers outside of Europe in Canada and Australia. In England all but one had no relevant travel history to locations where monkeypox is prevalent. The UK Health Security Agency stated the latest instances in the nation were largely among males who self-identified as homosexual, bisexual, or men who had sex with men, where 85+ cases have already been verified (data from 27 May, 2022). On Friday (20 May, 2022), Portugal discovered nine more cases, bringing the total to 23. The prior 14 instances were all men between the ages of 20 and 40 who self-identified as homosexual, bisexual, or having sex with men [6]. This viral outbreak in the United Kingdom, Portugal, and other countries in Europe is unusual, and the lack of clarity about how and where people became infected makes sexual contact a conceivable route of transmission that has never been connected to the monkeypox virus previously. What made such assumptions possible? Men who have sex with other men (MSM) or bisexuals have been the major source of locally transmitted cases in the UK and Portugal. Although the present instances are among MSM men, it is probably too early to make any inferences regarding the method of transmission or to presume that sexual activity was required for viral transmission. As a result, there's no proof that it's a sexually transmitted virus like HIV. Long-term skin-to-skin contact might be the crucial component. Sexual transmission means that the virus must be present in semen or vaginal secretions, such tests have yet to be performed. Therefore, we must not stigmatize the MSM groups. Because the viruses that cause monkeypox and smallpox are from separate viral familie, they cannot be confused with chickenpox. As a result, the varicella vaccination is ineffective against monkeypox and smallpox viruses. While the smallpox vaccine is thought to protect against infection with the monkeypox virus, the number of individuals who have been vaccinated has been falling year after year since systematic immunization ceased decades ago owing to smallpox control. As a result, more young individuals may be in danger currently. Monkeypox is normally self-limiting, although it can be severe in some people, such as youngsters, pregnant women, or those who have had their immune system suppressed by other illnesses. The West African clade appears to produce less severe illness in humans than the Congo Basin clade, with a case fatality rate of 3.6% against 10.6% for the Congo Basin clade [7]. Currently, the diagnosis of this condition is based on the detection of unique sequences of viral DNA either by real-time polymerase chain reaction (PCR) and/or sequencing. A vaccine is known under the trade names JYNNEOSTM, Imvamune or Imvanex developed by Bavarian Nordic has been registered in the EU, USA, and Canada for the prevention of monkeypox and smallpox. Work is currently underway on a vaccine dedicated to monkeypox. Tecovirimat is licensed for the treatment of numerous poxviruses, including monkeypox, in the European Union and the United States [8]. If antiviral therapy is needed, BMJ Best Practice suggests tecovirimat or the smallpox medication brincidofovir, combined with supportive care (including antipyretic, fluid balance, and oxygenation). If subsequent bacterial or varicella zoster infection is suspected, empirical antibiotic treatment or aciclovir may be utilized [9]. Currently, the most essential objective is to avoid infections by controlling the spread of diseases and discovering new ways to disseminate the virus. Smallpox immunizations should be reconsidered, if not made mandatory, in order to protect the young from the disease's devastating course, especially since this vaccine has been well-known and tested for years. We should also consider obligatory vaccinations of EMS and other medical personnel to ensure their immunity to infection and to reduce patient infections caused by potentially infected medical personnel. In the case of this disease, it is critical to establish EMS norms of behavior, especially because the number of patients is rapidly increasing, and COVID-19 has already demonstrated that the number of infections may rapidly increase. As with the COVID-19 epidemic, we must continue to provide PPE for medical professionals. This virus is harmful because it infects individuals for far longer than COVID-19 and its existing versions, exposing more people despite the more difficult transmission method due to

a longer-lasting disease, but we must also be prepared for further mutations. It is also necessary to investigate how the so-far endemic disease spread so quickly around the world and in a week infected so many people. When considering the duration of the disease, we must be careful and prevent it from spreading quite quickly in the population.

Conflict of interest

All authors declare no conflict of interest.

REFERENCES

1. Ladnyj ID, Ziegler P, Kima E. A human infection caused by monkeypox virus in Basankusu Territory, Democratic Republic of the Congo. Bull World Health Organ. 1972; 46(5): 593–597, indexed in Pubmed: 4340218.
2. Anderson MG, Frenkel LD, Homann S, et al. A case of severe monkeypox virus disease in an American child: emerging infections and changing professional values. Pediatr Infect Dis J. 2003; 22(12): 1093–6; discussion 1096, doi: 10.1097/01.inf.0000101821.61387.a5, indexed in Pubmed: 14688573.
3. Likos AM, Sammons SA, Olson VA, et al. A tale of two clades: monkeypox viruses. Journal of General Virology. 2005; 86(10): 2661–2672, doi: 10.1099/vir.0.81215-0.
4. Monkeypox - Democratic Republic of the Congo. World Health Organization (WHO). https://www.who.int/emergencies/disease-outbreak-news/item/monkeypox-democratic-republic-of-the-congo (22.05.2022).
5. Monkeypox_Public_www.global.health. https://docs.google.com/spreadsheets/d/1CEBhao3rMe-qtCbAgJTn5ZKQMRFWeAeaiXFp-BY3gbHE/edit?mc_cid=73764eb731&mc_eid=afd8ccb9bc#gid=0 (22.05.2022).
6. Monkeypox cases confirmed in England – latest updates. https://www.gov.uk/government/news/monkeypox-cases-confirmed-in-england-latest-updates (22.05.2022).
7. Multi-country monkeypox outbreak in non-endemic countries. https://www.who.int/emergencies/disease-outbreak-news/item/2022-DON385 (22.05.2022).
8. Tecovirimat SIGA. https://www.ema.europa.eu/en/medicines/human/EPAR/tecovirimat-siga (22.05.2022).
9. Poxvirus infection (monkeypox and smallpox). https://bestpractice.bmj.com/topics/en-gb/1611/treatment-algorithm (22.05.2022).