

Monkeypox: a zoonosis and sexually transmitted infection (STI)

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Monkeypox is a zoonosis caused by the monkeypox virus (MPXV) which belongs to the same genus as the human smallpox virus, the Orthopoxviruses. Discovered in 1958 in macaques imported from tropical regions, it is not, however, a simian virus, as its reservoir seems to be shared between several species of wild African rodents.

The first human case of monkeypox was described in 1970 in a child in the Democratic Republic of Congo, the country most affected by this virus [1]. Long confused with human smallpox, which has been officially eradicated since 1980, and 85% prevented by cross-immunity induced by smallpox vaccination, monkeypox has emerged in several regions of central and western Africa, the tropical rainforest ecosystem favoring its zoonotic transmission through contact or consumption of bushmeat.

Cases have also been described outside Africa, notably in 2003 in the American Midwest where 71 people were infected by native rodents (prairie dogs) contaminated in a pet store by Gambian rats imported from Ghana [2].

Monkeypox has a favorable course in the majority of cases. It is much less severe than human smallpox, with the lethality rate depending on the geographical origin of the strains: 10.6% for Central Africa versus 3.6% for West Africa [3].

Since May 7, 2022, an outbreak of human cases of monkeypox has been observed in Europe, North America and Australia. On July 6, 2022, 7146 cases were recorded in 53 countries, including 577 in France. This epidemic reveals major changes in the epidemiology of this tropical zoonosis:

- no recent travel to Africa, with the exception of the first case in the United Kingdom, which was returning from Nigeria;
- no identified zoonotic origin, but a certain or probable human-to-human transmission;
- high male predominance, mostly men who have sex with other men (MSM) most of the time with multiple partners;
- very high prevalence of genital and anal localizations of the vesicular rash (78% for 498 confirmed cases in France) [4].

Human-to-human transmission of MPXV is known, with up to 50% of people living in close proximity to an infected individual [5], either directly through contact with skin or mucous lesions, body fluids, respiratory droplets, or indirectly through contaminated objects. However up to now, the sexual route had not been described among the modes of human-to-human transmission and MSM were not considered as a population at risk. Rare secondary cases are also observed in women and children, but through repeated intimate contact with multiple and

varied partners, MPXV spreads rapidly in some gay communities [6]. This epidemic form of monkeypox makes it a new STI, which is confirmed by the presence of virus in the semen of patients [7].

This development could result from a modification of a divergent branch of the African MPXV strains, the epidemic strain having a single origin and showing potential signs of human adaptation [8]. There is concern about the establishment of this virus and that the disease become endemic.

In France, monkeypox is subject to mandatory reporting and an information campaign has been launched among health care providers and organizations in charge of MSM [4].

The French National High Authority for Health has recommended a reactive post-exposure vaccination strategy with a third-generation smallpox vaccine using a 2-dose schedule [9].

On June 25, 2022, the WHO Emergency Committee did not conclude that monkeypox was a public health emergency of international concern. It will meet again on July 18, even as the epidemic continues to spread.

The French National Academy of Medicine recommends implementing all available measures to control its spread, including:

- to define populations at risk without stigmatizing them;
- to sensitize health professionals in charge of STI screening and treatment about monkeypox cases early detection, especially in free information, screening and diagnosis Centers;
- to inform the public about clinical aspects of the disease and how it is transmitted;
- to remind all confirmed cases to strictly self-isolate for 21 days and to contribute to the epidemiological investigation to identify the people they may have contaminated;
- to identify the contact persons around each case and offer them post-exposure vaccination, which is all the more effective if it is carried out rapidly after exposure;
- to make the hygiene measures adopted by relatives and health professionals around suspected or confirmed cases, in order to avoid any direct or indirect transmission;
- to avoid contact between patients and animals during illness until “the fall of scabs”;
- to assess the benefit/risk ratio of pre-exposure vaccination of “people”.

References

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