

Monkeypox Virus Is Frequently Detected in Saliva, Semen and Other Clinical Samples from Infected Patients

A new study, conducted on more than 140 samples from 12 infected patients, contributes to a better understanding of the dynamics of disease transmission

Barcelona, 14 July, 2022- Viral DNA can be frequently detected in **different clinical samples from monkeypox-infected patients**, including saliva and semen, according to a new study led by the Barcelona Institute for Global Health (ISGlobal), a centre supported by the "la Caixa" Foundation, and the Hospital Clínic of Barcelona. The study, published in *Eurosurveillance*, contributes to a better understanding of **how this emerging disease is transmitted**.

The **current monkeypox outbreak** represents another **zoonotic disease** that has crossed borders. In the last six months, more than **9,000 cases of monkeypox** have been reported worldwide **in countries where the disease is not endemic**. Initial cases were detected in Britain, Portugal and Spain, mainly in men who have sex with men. However, the disease has spread to many other countries and there is concern that it may spread to vulnerable populations, such as immunocompromised patients or children.

The disease is known to be transmitted by direct contact with the lesions of an infected patient or by surfaces contaminated by these lesions, but **little is known about the possible presence of virus in other biological samples**, such as saliva, urine or semen.

In this study, the team led by **Mikel Martínez**, ISGlobal researcher, and **José Luis Blanco**, from the Hospital Clínic of Barcelona, investigated the **presence of genetic material of the virus in different biological samples**, collected at different times, from **12 patients with confirmed monkeypox infection**. At the time of diagnosis, a high viral DNA load was detected in the skin lesions of all patients. In addition, DNA was detected in the **saliva of all cases**, some of them with **high viral loads**. Only one previous study had tested saliva, in one single patient. Viral DNA was also detected in **rectal** (11 of 12 patients), **nasopharyngeal** (10/12 patients), **semen** (7/9 patients), **urine** (9/12 patients) and **faecal** (8/12 patients) samples.

"A couple of previous studies had already shown occasional presence of viral DNA in some samples and in some patients, but here we show that **viral DNA is frequently present in various biological fluids**, particularly saliva, during the acute phase of the disease, and up to 16 days after the onset of symptoms in one patient," explains **Aida Peiró**, ISGlobal researcher and first author of the study.

The authors point out that the presence of viral DNA **does not necessarily mean infectious virus**, and that the next step will be to try to isolate infectious virus from such samples. However, the high viral load detected in saliva or semen suggests that such fluids have infectious potential, they add.

"The results of our study contribute to a **better understanding** of the mechanisms and dynamics of **virus transmission**, as well as the **possible role of sexual transmission**," Martínez concludes.

Reference

Peiró-Mestres Aida, Fuertes Irene, Camprubí-Ferrer Daniel, Marcos María Ángeles, Vilella Anna, Navarro Mireia, Rodríguez-Elena Laura, Riera Josep, Català Alba, Martínez Miguel J, Blanco Jose L, on behalf of the Hospital Clinic de Barcelona Monkeypox Study Group. Frequent detection of monkeypox virus DNA in saliva, semen, and other clinical samples from 12 patients, Barcelona, Spain, May to June 2022. Euro Surveill. 2022;27(28):pii=2200503.

About ISGlobal

The Barcelona Institute for Global Health, ISGlobal, is the fruit of an innovative alliance between the "la Caixa" Foundation and academic and government institutions to contribute to the efforts undertaken by the international community to address the challenges in global health. ISGlobal is a consolidated hub of excellence in research that has grown out of work first started in the world of health care by the Hospital Clínic and the Parc de Salut MAR and in the academic sphere by the University of Barcelona and Pompeu Fabra University. Its working model is based on the generation of scientific knowledge through Research Programmes and Groups, and its translation through the areas of Training and Analysis and Global Development. ISGlobal has been named a Severo Ochoa Centre of Excellence and is a member of the CERCA system of the Generalitat de Catalunya.

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