

Comparison of immune response against Monkeypox Virus in infected patients and historic or newly vaccinated subjects

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Abstract

Monkeypox virus (MPXV) is a zoonotic disease endemic in the rain forest countries of Central and West Africa. Understanding the immune response in zoonosis is fundamental to prevent and contrast viral spreading. MPXV is a close relative of the Variola (smallpox) virus and vaccination with vaccinia virus give an 85% protection against MPXV. With the emergence of the recent MPXV outbreak, Jynneos vaccine has been proposed to individuals at high-risk of exposure. Comparative data on MPXV immune response in vaccinated or infected subjects is still scarce. Here we described the differences between a group of infected patients in comparison to smallpox or Jynneos vaccinated subjects. The patients' response is stronger and faster, while the Jynneos vaccinated controls need more time to develop a good immunity. Interestingly, the historic smallpox-vaccinated controls retain a degree of protection, even after years from vaccination, which is most visible in the T-cellular memory that is comparable to the newly vaccinated subjects.

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