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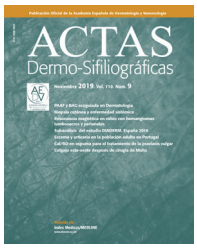

RESIDENT'S FORUM

[Translated article] RF – Potential Treatments for Monkeypox

FR – Potenciales tratamientos en viruela símica (*monkeypox*)

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Since smallpox was declared to be eradicated in 1980,[1] very few clinical or laboratory studies have attempted to find specific antiviral therapies against variola virus or other viruses of the genus *Orthopoxvirus*, such as monkeypox virus, which causes monkeypox. After decades as an endemic disease with sporadic outbreaks in central and western Africa, more than 500 cases of monkeypox were confirmed in May 2022 in developed countries, with Spain being the most severely affected (120 cases). Treatment to date has been based on support measures and treatment of symptoms. However, the current expansion of the outbreak has necessitated specific treatments that can curb transmission or prevent complications in the most severe cases.

Cidofovir, an intravenous drug approved for the treatment of cytomegalovirus retinitis in HIV-infected patients, has proven able to reduce the number of skin lesions and mortality in animals (primates) inoculated with monkeypox virus at a single dose of 5 mg/kg. In contrast, administration of the poxvirus vaccine did not achieve a statistically significant reduction in mortality in infected animals.[2]

A modified version of cidofovir, brincidofovir, which was formed by conjugation of cidofovir with a lipid fraction, has shown in vitro activity against monkeypox virus. Its advantages over cidofovir are the possibility of oral administration and its low nephrotoxicity.[1]

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Studies performed to date with mitoxantrone, an anticancer drug with proven activity against vaccinia virus (orthopoxvirus used as a vaccine against smallpox), have shown it to be efficacious against monkeypox virus only in vitro, a result that has not been reproduced in vivo.[3] Similarly, mycophenolic acid and ribavirin have been promising in vitro, although no animal models have been tested to date.[4]

The only available drug with an indication for monkeypox is tecovirimat, an antiviral agent that interferes with protein VP37, which is found on the surface of orthopoxviruses. It was authorized by the European Medicines Agency in January 2022 for treatment of human smallpox, monkeypox, cowpox, and complications resulting from vaccination against smallpox (vaccinia virus) after proving able to considerably reduce mortality in animal models. Today, tecovirimat is considered the antiviral of choice in adults and children with monkeypox weighing more than 13 kg. The drug is administered orally at 600 mg every 12 hours for 14 days (200 mg in patients weighing 13–25 kg, 400 mg for those weighing 25–40 kg) and is initiated as soon as the infection is diagnosed. The drug's efficacy and good safety profile, with only headache and nausea as common adverse effects, led to its authorization under «exceptional circumstances» in the absence of other, specific therapies for this group of potentially fatal diseases.[5]

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