Centers for Disease Control and Prevention

Guidance for Tecovirimat Use Under Expanded Access Investigational New Drug Protocol during 2022 U.S. Monkeypox Cases

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Tecovirimat (also known as TPOXX or ST-246) is FDA-approved for the treatment of human smallpox disease caused by *Variola virus* in adults and children. However, its use for other orthopoxvirus infections, including monkeypox, is not approved by the FDA. Therefore, CDC holds a non-research expanded access Investigational New Drug (EA-IND) protocol that allows for the use of tecovirimat for primary or early empiric treatment of non-variola orthopoxvirus infections, including monkeypox, in adults and children of all ages.

Learn more about how to obtain tecovirimat.

Treatment Consideration

Tecovirimat may be considered for treatment in people infected with *Monkeypox virus*:

- With severe disease (e.g., hemorrhagic disease, confluent lesions, sepsis, encephalitis, or other conditions requiring hospitalization)
- Who are at high risk of severe disease:
  - People with immunocompromising conditions (e.g., HIV/AIDS, leukemia, lymphoma, generalized malignancy, solid organ transplantation, therapy with alkylating agents, antimetabolites, radiation, tumor necrosis factor inhibitors, high-dose corticosteroids, being a recipient with hematopoietic stem cell transplant <24 months post-transplant or ≥24 months but with graft-versus-host disease or disease relapse, or having autoimmune disease with immunodeficiency as a clinical component)
  - Pediatric populations, particularly patients younger than 8 years of age
  - Pregnant or breastfeeding women
  - People with a history or presence of atopic dermatitis, people with other active exfoliative skin conditions (e.g., eczema, burns, impetigo, varicella zoster virus infection, herpes simplex virus infection, severe acne, severe diaper dermatitis with extensive areas of denuded skin, psoriasis, or Darier disease [keratosis follicularis])
  - People with one or more complication (e.g., secondary bacterial skin infection; gastroenteritis with severe nausea/vomiting, diarrhea, or dehydration; bronchopneumonia; concurrent disease or other comorbidities)
- With aberrant infections involving accidental implantation in eyes, mouth, or other anatomic areas where *Monkeypox virus* infection might constitute a special hazard (e.g., the genitals or anus)

See also: Treatment Information for Healthcare Professionals

Efficacy

In animal studies, tecovirimat has been shown to decrease the chance of dying from infections with orthopoxviruses when given early in the disease course. In people, efficacy has been limited to drug levels in blood and a few case studies. A case series of individuals infected with *Monkeypox vir*us, which included one patient treated with tecovirimat, suggests that tecovirimat may shorten the duration of illness and viral shedding (Lancet 2022).

People who are ineligible for tecovirimat treatment under the EA-IND include:

- Patients (or their legally authorized representatives) who are unwilling to sign an informed consent and refuse tecovirimat treatment
- Patients with known allergy to tecovirimat and/or excipients of tecovirimat

Available Formulations

Tecovirimat is available as an oral capsule (200 mg) and injection for intravenous (IV) administration. Drug absorption of oral formulation is dependent on adequate concurrent intake of a full, fatty meal.

IV tecovirimat should not be administered to patients with severe renal impairment (CrCl <30mL/min). Oral formulation remains an option for this population. IV tecovirimat should be used with caution in patients with moderate (CrCl 30-49 mL/min) or mild (CrCl 50-80 mL/min) renal impairment as well as pediatric patients < 2 years of age given immature renal tubular function.

Adverse Reactions

- Oral: headache (12%), nausea (5%), abdominal pain (2%), and vomiting (2%). Neutropenia was found in one study participant.
- IV: infusion site pain (73%), infusion site swelling (39%), infusion site erythema (23%), infusion site extravasation (19%), and headache (15%).

Drug-Drug Interactions

Significant interactions have been reported in healthy adults with co-administration of repaglinide (hypoglycemia) and midazolam (decreased effectiveness of midazolam).

Special Populations

Pregnancy/Lactation

Although tecovirimat has not been studied in pregnant and nursing women, they are not excluded from treatment if deemed appropriate following careful clinical assessment and discussion of risks/benefits with patient using a shared decision-making model. There are no human data to establish the presence or absence of tecovirimat-associated risk of fetotoxicity, effect on milk production, the presence of drug in human milk, and/or effects on breastfed children. No fetotoxicity was found in animal studies, though tecovirimat was detected in trace amounts in milk.

Pediatrics

Tecovirimat has been used in a 28-month-old child with no adverse effects attributed to the drug, but no clinical studies have been done in pediatric populations. Monitoring of renal function is recommended in pediatric patients < 2 years of age, given theoretical concerns that renal immaturity in young pediatric patients may result in higher exposure of hydroxypropyl-β-cyclodextrin, an ingredient in IV tecovirimat. Animal studies have shown potential for nephrotoxicity at very high exposure levels of hydroxypropyl-β-cyclodextrin.

Cost

The drug is provided at no cost. There is no funding available to assist with laboratory testing. Testing plasma PK samples collected and sent by the hospital to the lab contracted to test PK samples and/or blood or specimens sent via the health department to CDC for serology or virologic testing would not have a cost to the patient.

How to Request

CDC, in partnership with FDA, has made it easier for healthcare providers to provide tecovirimat (TPOXX) treatment to patients with monkeypox under the expanded access investigational new drug (EA-IND).

The streamlined process allows healthcare providers to start treatment before the paperwork is submitted, and reduces the number of required forms, patient samples, photos, and gives patients the option to see their doctor virtually.

To request tecovirimat for use in a patient with suspected, probable, or confirmed monkeypox, please contact your state/territorial health department or CDC through the CDC Emergency Operations Center (770-488-7100).

> How to obtain tecovirimat (TPOXX)

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