Severe Mpox Among People Living with HIV Receiving Tecovirimat in New York City

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Elizabeth A. Garcia[1], Maura K. Lash[1], Tristan D. McPherson[1], Mary Foote[1], Karen A. Alroy[1], Ellen H. Lee[1], Wendy Wen[1], Jeanne Sullivan Meissner[1], Amma Bosompem[2], Alyssa Bouscaren[3], Marcia Wong[1]

[1]New York City Department of Health and Mental Hygiene, New York, USA, [2]Human Resources Administration, New York City Department of Social Services, New York, USA,
[3]Department of Homeless Services, New York City Department of Social Services, New York, USA

BACKGROUND

- The mpox clinical course among people with HIV (PWH) during the 2022 outbreak is poorly understood.
- Severe mpox disproportionately impacted Black men and people who are unstably housed.[1]
- We describe mpox among PWH in New York City (NYC) who received >14 days of tecovirimat and/or coadministration of additional mpox treatments.

METHODS

- We identified PWH with persistent or worsening mpox during tecovirimat treatment through healthcare providers who called NYC Department of Health and Mental Hygiene (DOHMH) or Centers for Disease Control and Prevention's clinical team for consultation from May 21, 2022 to January 31, 2023.
  - We retrospectively collected demographics and HIV/mpox clinical information documented in the DOHMH communicable diseases surveillance database during these phone calls.
- We crossmatched cases with:
  - HIV surveillance for missing CD4 and viral load;
  - Citywide Immunization Registry for Jynneos vaccination;
  - Department of Social Services for housing status; and
  - Health information exchange systems for hospital admission and discharge data.

RESULTS

Table 1: Demographics

Characteristic	Median (range) or n (%)
Age	38 (29–45)
Gender identity	
Man	11 (100%)
Race/Ethnicity	
Black non-Hispanic	8 (73%)
White non-Hispanic	0
Hispanic	2 (18%)
Other	2 (18%)
Housing status	
Unstably housed in the past year*	5 (45%)
HIV-related characteristics	
CD4 count (cells/mm^3)	30 (3–153)
Viral load (cells/mL)	237,000 (3,580–2 million)
Not on HIV antiretroviral therapy (ART) at time of mpox diagnosis	9 (82%)
Jynneos status**	
Received 1 dose of Jynneos vaccine	3 (27%)

*Unstably housed defined as: shelter, or transitional single room occupancy (SRO), or congregate residential housing.
**All recipients of Jynneos were diagnosed with mpox within five days of receiving the vaccine.

This group of PWH with advanced HIV experienced high social vulnerability, severe mpox manifestations, and high mortality. **Early and extended tecovirimat with coadministration of other mpox treatments**, and social support services like care navigation and housing to improve engagement and retention in HIV care, are important to improve clinical outcomes.

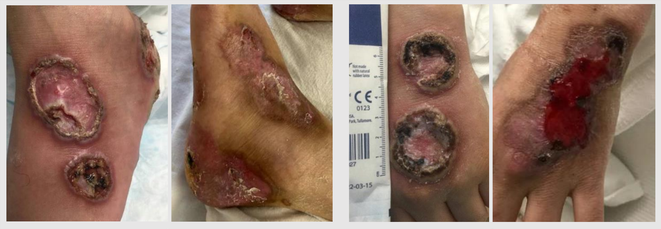
RESULTS, cont.

Examples of severe mpox manifestations*

- Necrotic "burn-like" lesions
  - Obliteration of recognizable facial features *(Figure 2)*
- Eye
  - Globe collapse *(Figure 3)*
  - "Corneal melt"
- Airway edema
  - Required intubation and then tracheostomy for airway protection
- Gastrointestinal
  - Esophageal ulcerations and bleeding
  - Uncontrollable rectal bleeding

*Potential concern for osteomyelitis (osteomyelitis variolosa[2]), but clinical picture was unclear

Figure 1. Images of necrotic lesions on foot and hand



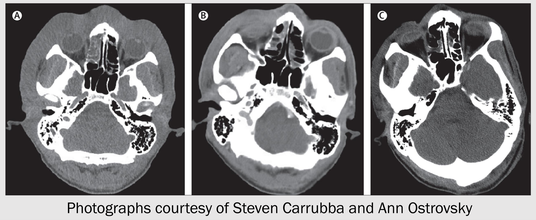
A B

(A) Left Foot, Dorsal surface and Heel after debridement (left); Left foot after intralesional/topical cidofovir (right) (B) Dorsum Left Hand (left); Left hand after intralesional/topical cidofovir (right)
Photographs courtesy of John Winters

Figure 2. Image of confluent necrotic facial lesions[3]

Bounded by a raised skin edge containing vesicles
Photograph courtesy of Steven Carrubba and Ann Ostrovsky

Figure 3. CT scans showing progression of orbital globe collapse[3]



Photographs courtesy of Steven Carrubba and Ann Ostrovsky

Table 2. Treatments and Outcomes

Characteristic	Median (range) or n (%)
Time from specimen collection to treatment initiation (days)	5.5 (0–16)
Tecovirimat duration (days)*	21 to >120
Coadministered medications	
VIG	9 (82%)
Multiple doses of VIG	5 (56%)
Cidofovir	2 (18%)
Intralesional/topical cidofovir	1 (9%)
Brincidofovir	2 (18%)
Trifluridine eye drops	2 (18%)
ART	11 (100%)
Hospitalization	
Hospitalized for mpox	11 (100%)
Length of hospitalization, days**	57 (13-86)
Clinical disposition as of January 31, 2023	
Discharged to home, shared housing, or shelter	3 (27%)
Discharged to long term care facility	1 (9%)
Hospitalized, non-ICU	1 (9%)
Hospitalized, ICU	1 (9%)
Death	5 (45%)

VIG: vaccinia immune globulin; ART: antiretroviral therapy
*Range of treatment duration. Due to methods of data collection via provider reporting, we were unable to collect exact days of tecovirimat duration.
**Includes those with discharge dates (n=9). Two patients still hospitalized; length of hospitalization was 166 and 106 days as of January 31, 2023.

CONCLUSIONS

- This group of PWH with advanced HIV had severe mpox manifestations and poor response to tecovirimat.
  - All PWH in this group identified as Black, Hispanic, and/or non-White men.
  - Factors associated with poor HIV outcomes, such as housing instability and lack of access to care, may also lead to severe mpox outcomes.
- Early and extended tecovirimat with coadministration of other mpox treatments in the setting of limited options is important to try to improve outcomes.
- Findings of severe disease and high mortality highlight the urgency of mitigating deep social inequities and the need for high-quality research to optimize care in this group of PWH.
- Limitations included:
  - Dependence on provider reporting and documentation;
  - Reliance on DOHMH's communicable diseases surveillance database non-standardized notes fields;
  - Inability to collect exact days of tecovirimat duration due to prepositioned doses at NYC hospital pharmacies.
- Strengths included cross-checking against NYC and New York State (NYS) data and surveillance systems.

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AUTHOR CONTACT INFORMATION
Contact: Elizabeth A. Garcia, PharmD (she/her/hers)
Email: egarcia9@health.nyc.gov, eagarcia.post@gmail.com

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