LONGITUDINAL ASSESSMENT OF VIRAL SHEDDING AMONG PATIENTS WITH MPOX IN TORONTO, CANADA

292

Darrell H. S. Tan,[123] Robert Kozak,[4] Jacklyn R. Hurst,[4] Maedeh Naghibosadat,[4] Huiting Ma,[2] Oscar Pico Espinosa,[2] Shreya Shah,[2] Natasha Christie-Holmes,[5] Jessica Lam,[6] Angel Ly,[6] Reva Persaud,[2] Charlie Tan,[1] Matthew Muller,[1] Sharmistha Mishra[123]

1. Division of Infectious Diseases, St. Michael's Hospital, Toronto, Canada; 2. MAP Centre for Urban Health Solutions, St. Michael's Hospital, Toronto, Canada; 3. Department of Medicine, University of Toronto, Toronto, Canada; 4. Biological Sciences, Sunnybrook Research Institute, Sunnybrook Hospital, Toronto, Canada; 5. Epidemic and Pandemic Infections Consortium, University of Toronto, Toronto, Canada; 6. Toronto High Containment Facility, Temerty Faculty of Medicine, University of Toronto, Toronto, Canada

BACKGROUND

- Patients with human Mpox infection may have detectable virus in multiple anatomic compartments
- Longitudinal data on viral shedding are scarce
- We characterized shedding of Mpox virus in a longitudinal cohort of patients presenting with acute infection.

METHODS

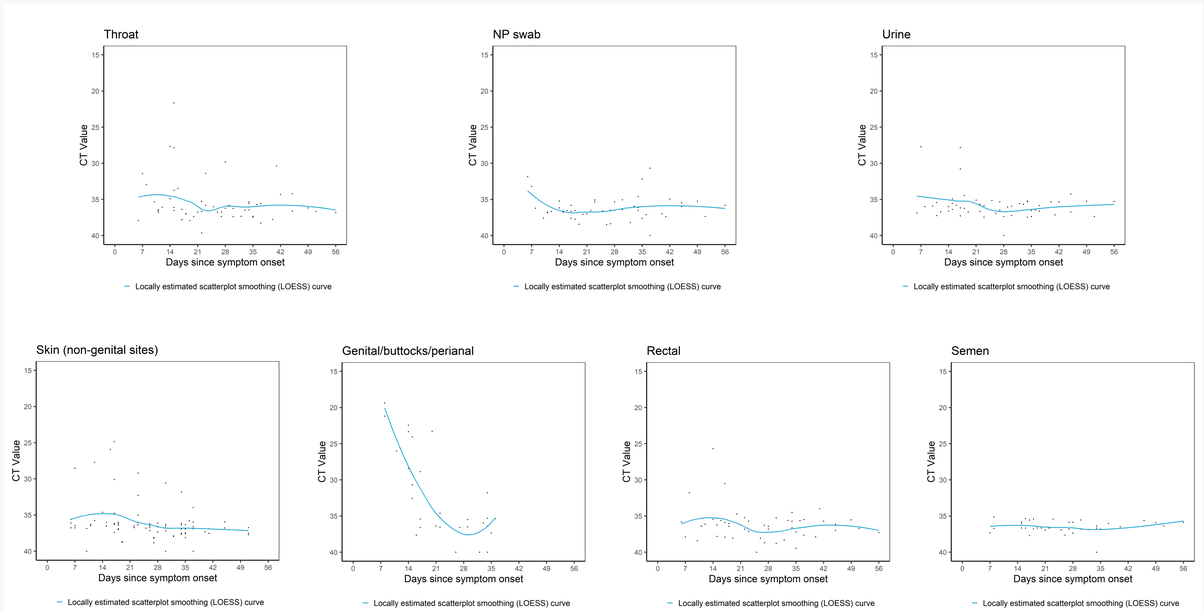
- **Design:** Mpox Prospective Observational Cohort Study (MPOCS)
- **Eligibility:** adults with confirmed or suspected Mpox infection at an academic hospital in Toronto, Canada.
- **Schedule:** weekly (±3 days) visits regardless of symptom status until 1 week after complete resolution of the last skin lesion
- **Specimens collected:**
  - Swabs of skin lesions (up to 3 anatomic sites/visit)
  - Nasopharyngeal (NP) swab
  - Oropharyngeal swab
  - Rectal swab
  - Urine
  - Semen
- **Laboratory methods:**
  - Refrigerated specimens transported to lab within 24h, frozen at -80°C, batch tested
  - Quantitative polymerase chain reaction (qPCR) targeting the viral polymerase gene E9L
- **Analysis:**
  - Descriptive analysis of serial cycle threshold (Ct) values for specimens taken from participants with confirmed infection
  - Graphically represented using locally estimated scatterplot smoothing (LOESS) curves

MPOCS™
MPX PROSPECTIVE OBSERVATIONAL COHORT STUDY

Mpox virus genetic material may remain detectable in multiple anatomic compartments for up to 8 weeks after symptom onset. Correlation with infectivity requires further study.

RESULTS – VIRAL SHEDDING

- Excluding specimens during/after tecovirimat, 21 participants provided a median (range) of 3 (1, 7) visits each, beginning 14 (7, 35) and ending 34.5 (6, 56) days from symptom onset
- The proportion of participants with evidence of viral shedding for at least one timepoint was 100% for skin specimens, NP swabs, rectal swabs and urine, but lower in semen (76%).
- Shedding persisted at the final sampling timepoint in 95% of rectal swab and 76% of semen samples



RESULTS – PARTICIPANTS

- 28 participants enrolled, 21JUN2022-12OCT2022 (Table)

Characteristic	Value[a]
Age	38.5 (33, 43)
Assigned male sex at birth	28 (100%)
Race	
White	10 (36)
Black	6 (21)
Latino	5 (18)
Asian	5 (18)
Other	2 (7)
Sexual orientation	
Gay	22 (79%)
Bisexual	5 (18)
Other	1 (4)
HIV status	
Positive, on antiretroviral therapy	13 (46)
Negative, on PrEP	10 (36)
Negative, not on PrEP	5 (18)
Worst pain experienced (0-10 scale)	8 (4.75, 10)
Prior early generation smallpox vaccine	10 (36)
Prior 3rd generation smallpox vaccine (Imvamune™)	
One dose	5 (18)
Two doses	2 (7)
Received tecovirimat	9 (32)

[a] Values represent median (interquartile range) or value (%)

CONCLUSIONS

- Shedding was most pronounced in genital & perianal specimens
- Shedding typically declined in the 2nd week of illness
- Mpox virus genetic material may remain detectable in multiple anatomic compartments for up to 8 weeks after symptom onset. Correlation with infectivity requires further study.

ACKNOWLEDGEMENTS

- We gratefully acknowledge grant funding from the University of Toronto Emerging & Pandemic Infections Consortium, the Public Health Agency of Canada and the Canadian Institutes of Health Research
- DHST, SM are supported by the Canada Research Chair program

CONTACT INFORMATION

30 Bond St., Toronto ON, M5B 1W8, Canada
darrell.tan@gmail.com