Inflammatory markers in MPOX and HIV Co-infection during the 2022-23 outbreak, Dominican Republic

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Table 1. Clinical findings in MPOX/HIV co-infections in the Dominican Republic

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Age (Mean 36.2; IQR 10)	32	35	49	32	33
HIV status	+	+	+	+	+
Fever	Y	Y	Y	Y	Y
Lymphadenopathies					
Cervical	Y	Y	Y	N	N
Inguinal	Y	Y	Y	Y	Y
Pustular lesions					
Head and neck	Y	Y	Y	Y	Y
Perioral	Y	Y	Y	Y	Y
Face	Y	Y	Y	Y	Y
Nasal	Y	Y	Y	Y	Y
Trunk	Y	N	Y	N	N
Abdomen	Y	N	Y	N	N
Genital lesions	Y	Y	Y	Y	Y
Perianal	Y	Y	Y	Y	Y
Penis/Scrotal	Y	Y	Y	Y	Y
Local Complications	N	N	N	N	N
Days with symptoms	16	19	29	26	30
Mean	*24*	*IQR 12*			
Median	*26*				
HIV viral load (copies/mm3)	< 1000	< 450	< 40	<40	<40
T lymphocyte count					
CD4 + count (µ/mL)	363	425	440	389	506
CD8 + count (µ/mL)	202	239	320	289	309
CD4:CD8 ratio (µ/mL)	1.8	1.7	1.4	1.3	1.6
Variability CD4:CD8 ratio after	1.9	2.0	1.9	1.9	2.6
MPOX infection					
Mean	*2.6*	*IQR 0.4*			
Median	*1.9*				

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***Photos obtained with patient´s authorization. Used only for academic purposes.**

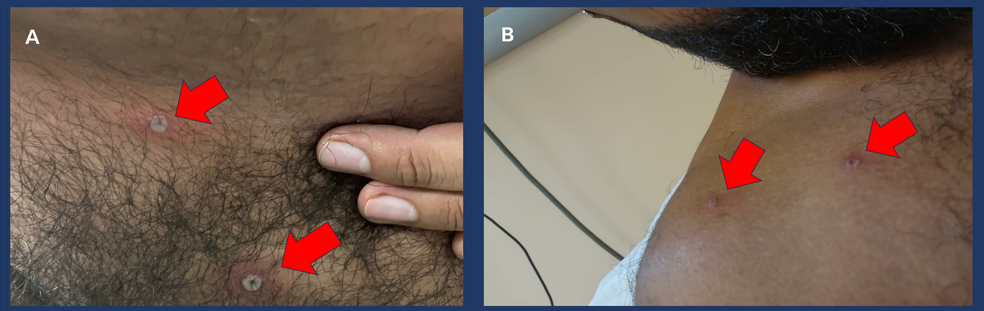

Figure 1A/B. Pustular lesions associated to MPOX infection in a PWH (day 8 after onset of symptoms.*

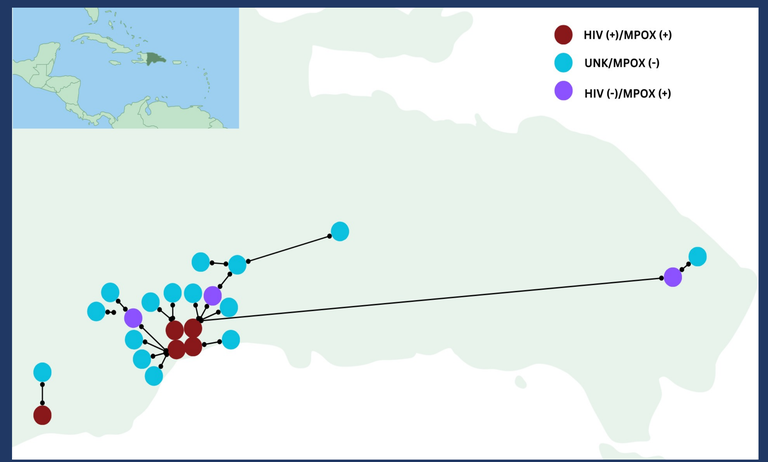

Figure 2. Geo-distribution of studied cases (four red dots (in the capital city, Santo Domingo) shared the same encounter site, a gay sauna. One red dot outlines in the south-west did not refered visiting any gay venue. Red depicts the five HIV positive cases described, and close contacts (approx. 5-15 days) before onset of MPOX symptoms. All contact nformation was provided by MPOX/HIV (+) participants.

Background

There is limited data to comprehend the clinical outcomes of MPOX (formerly monkeypox virus) infection in people living with HIV (PLWHIV), especially in low and middle- income (LMIC) countries during the 2022-23 outbreak. Previous studies have shown that immunocompromised status has been associated with a longer presentation and increasing the severity of the symptoms and mortality. This study is aimed to describe findings of co-infections in the DR.

Methods

An observational analysis of cases with PCR-confirmed MPOX infection attending an HIV/STI clinic in Santo Domingo. Samples were analyzed November 2022-January 2023. Participant data were collected from medical records during hospitalization and follow-up.

Results

- All participants were previously enrolled in HIV care and antiretroviral therapy, and self-identified as MSM with a mean age of 36.2 years. All developed systemic symptoms and skin lesions.
- Distribution of pustules was more frequent in the face (perioral) and genital/anal region, and the involvement of hands and feet was not reported. (Figure 1A/B)
- Fever and lymphadenopathies were reported in all cases. No other STIs were identified. Only one case required hospitalization and no fatalities were associated. Mean of effervescence manifestations was 24 days.
- HIV viral load showed no modifications before and after infection, however, CD4/CD8 ratio was observed before and after the infection (mean 2.6) (Table 1).
- Frequency of perioral lesions, and systemic manifestations were common among all cases.
- Geographical distribution of HIV(+)/(-) and MPOX (+)/(-) or UNK contacts was analyzed (Figure 2).

Conclusions

Pro-inflammatory reactions in MPOX infections observed in CD4:CD8 ratios might be of importance on outcomes and severity, and prolonged pustular stages. Public health actions to prevent mpox-HIV associated-deaths shall include integrated testing, diagnosis, and early treatment for mpox and HIV, and ensuring equitable access to both mpox and HIV prevention and treatment, such as antiretroviral therapy (ART).