P055

Infectious syphilis does not result in significant HIV viral load blips in a cohort of HIV-infected individuals, Vancouver, Canada.

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Background

- Infectious syphilis (defined as primary, secondary and early latent syphilis) is common amongst HIV-infected men who have sex with men (MSM) in North America.
- Blips in HIV plasma viral load have been associated with intercurrent illness, but limited information exists regarding the effect of syphilis infection on potential elevations in HIV plasma viral load in individuals suppressed on antiretroviral therapy (ART).
- We evaluated factors associated with the diagnosis of infectious syphilis, and assessed the effect of infectious syphilis on concurrent plasma viral load (pVL) values in a cohort of HIV-infected individuals.

Methods

- Individuals enrolled in the British Columbia Centre for Excellence in HIV/AIDS Drug Treatment Program (DTP) between July 1 2012 and March 30, 2014 were eligible for inclusion if there was laboratory-based evidence of infectious syphilis.
- Infectious syphilis was defined as a documented rapid plasma reagin (RPR) titre of >1:4, with documented prior negative within 12 months.
- An “episode” of infectious syphilis was defined as the period beginning 30 days prior to the reactive RPR titre. This period was thought to represent the most likely period of active syphilis infection for those with primary or secondary syphilis in the absence of corresponding clinical information.
- Incidence rates for the diagnosis of infectious syphilis were determined.
- Factors associated with a diagnosis of infectious syphilis were assessed adjusted for age, HIV risk group, receipt of ART and neighbourhood at time of diagnosis.
- For an analysis of pVL elevations during an episode of infectious syphilis, the analysis was further restricted to individuals with documented pVL within 60 days prior to the diagnosis of infectious syphilis or RPR test, with at least one subsequent pVL during the episode or RPR.
- The proportion of individuals experiencing change in pVL was determined.

Results

- Amongst 3362 individuals enrolled in the DTP during the study period (3598 episodes in total), 150 individuals had laboratory diagnosis of infectious syphilis.
  - Of the 150 individuals 121 had 2 episode (81%), 24 had 3 episodes (16%), and 5 had 4 episodes (3%).
- The overall incidence rate of infectious syphilis was 5.39 per 100 person-years (PY).
- A total of 648 individuals had documented pVL before and at time of RPR testing (See Table One).
  - 61 individuals had laboratory diagnosis of syphilis
- The incidence rate of infectious syphilis amongst those on ART with suppressed pVL (n=339) was 10.22 /100-PY while the rate was 13.16/100 PY for those not receiving ART(n=48); p=0.522
- Factors associated with infectious syphilis are displayed in Table Two.
- Amongst those with infectious syphilis and suppressed pVL at baseline (n=42, 72%), only 10 individuals experienced a blip in pVL (see Table One).

Results Continued

Table One. Baseline Characteristics of Individuals with infectious syphilis and concurrent pVL monitoring.

Characteristics	Overall (n = 648)	Syphilis (n = 61)	p-value
Age - median (IQR)	39 (32 – 46)	39 (32 – 43)	
Gender – no. (%)			
Female	62 (10)	0 (0)	0.002
Male	585 (90)	61 (100)	
History of MSM	287 (44)	38 (62)	0.000
History of injection drug use – no. (%)	179 (23)	9 (15)	0.056
Hepatitis C positive – no. (%)	194 (30)	14 (23)	0.112
On ART – no. (%)	600 (93)	58 (95)	0.609
Suppressed at baseline		42 (72)	
Suppressed during episode		32/42 (76)	
Detectable pVL during episode		10/42 (24)	
40 – 100 copies/mL		6/10 (60)	
100 – 500 copies/mL		2/10 (20)	
>1000 copies/mL		2/10 (20)	
Median RPR titre (Interquartile range)	NA	1:64 (IQR 1:32 – 1:256)	

Table Two. Factors associated with infectious syphilis diagnosis.

Variable	Unadjusted Odds Ratio (95% CI)	p-value	Adjusted Odds Ratio (95% CI)	p-value
Age	0.98 (0.96 – 1.01)	0.299	-- --	
History of injection drug use	0.40 (0.19 – 0.86)	0.020	-- --	
History of MSM	8.13 (2.47 – 26.7)	0.001	7.49 (2.20 – 24.98)	0.001
Residence in West-End neighbourhood	1.85 (1.07 – 3.18)	0.026	1.61 (0.91 – 2.86)	0.097
ART use at time of diagnosis	1.60 (0.48 – 5.32)	0.439	-- --	

Conclusion

- Diagnosis of infectious syphilis was relatively common over the study period, and was associated with MSM status.
- Most individuals with a diagnosis of infectious syphilis had documented pVL suppression prior to/at to the episode of syphilis.
- Amongst those who developed detectable pVL during an episode of infectious syphilis, the majority had low-level blips below 100 copies/mL.
- As the diagnosis of syphilis was determined on the basis of laboratory test results, correlation with clinical stage at diagnosis in a larger cohort of HIV-infected individuals would be of value.

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