Research letter

Primary syphilis in men causes painful anogenital lesions and serology is not always helpful

There has been an increase in infectious syphilis in Australia.[1] The diagnosis of primary syphilis is by dark field microscopy, PCR testing or serological testing; however, serology may be negative in early syphilis.[2 3] With the loss of our ability to perform dark field microscopy, patients are either treated empirically or await the results of molecular and/or serological testing for confirmation of *Treponema pallidum* infection.

We aimed to determine whether the proportion of patients with primary syphilis were treated empirically and, if treatment was delayed, how long patients had to wait for treatment and what proportion of patients with primary syphilis had negative serology at time of presentation. We reviewed clinical notes of patients who presented with anogenital lesions and had a diagnosis of primary syphilis over a 22-month period (2017–2019).

There were 83 patients who attended with primary syphilis between November 2017 and August 2019. Fifty-two patients were excluded from the analysis as they were either a sexual contact of syphilis or referred for treatment. All of the remaining 31 patients were male (3 reported female only partners, 5 male and female partners, 23 male only partners); the median age was 33 years (IQR 28–39). We found that 6/31 (19%) reported recent recreational drug use, 13/31 (42%) were taking HIV pre-exposure prophylaxis (PrEP) and 1/31 (3%) was HIV seropositive. The patients presented with painful anal lesions (6/31, 19%), painful penile lesions (17/31, 55%) and painless penile lesions (8/31, 26%). Six (19%) were infected with another sexually transmitted infection although there were no Herpes simpex virus (HSV) coinfections. Clinically, 16/31 patients (52%, 95% CI 34.02 to 69.20) were treated empirically on the day of presentation and 15/31 patients (48, 95% CI 30.80 to 65.98) had delayed treatment and awaited microbiological results. Of those who received delayed treatment, the median days before treatment was 5 days (range 3–14 days). The total cumulative number of days for delayed treatment was 85 days. Three out of the 31 had evidence of previous syphilis and all 3 had a non-reactive venereal disease research laboratory (VDRL) at presentation but a positive lesional PCR. Of the 28/31 with no previous syphilis, 6/28 (21%) had negative serology (EIA) at presentation. Receiving treatment on the day of presentation was not associated with sexual behaviour, being on PrEP, anatomical site or reported painful lesion(s) or recreational drug use (table 1).

We have shown in this small study that men with primary syphilis often have painful anogenital lesions and in 9/31 (29%), serology is unhelpful. We have also shown that the delay in treatment of primary syphilis is only 5 days. However, the cumulative number of days during which the men remained infectious was 85 days, which has implications for public health and syphilis control efforts. We know that MSM presenting with symptoms of secondary syphilis can experience significant delay to antibiotic treatment if they do not receive empirical treatment.[4] We did not ascertain what circumstances clinicians offer empirical treatment or decide to wait for microbiological results. It is important that molecular testing of anogenital ulcer material for *Treponema pallidum* DNA is undertaken at the initial visit and repeat serological testing should be undertaken at follow-up visit if initial syphilis serology is negative.

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Table 1 Crude OR associations with empirical treatment for primary syphilis on day of presentation

	Empirically treated at presentation (%)	Delayed treatment awaited microbiological testing (%)	OR	P value
Sex with males only	11/16 (69%)	12/15 (80%)	1.16	0.783
Sex with females/females and men	5/16 (31%)	3/15 (20%)	0.64	0.584
Taking HIV PrEP	8/16 (50%)	5/15 (33%)	0.667	0.547
HIV positive	1/16 (6%)	0/15	0.355	0.535
Penile lesion	14/16 (88%)	11/15 (73%)	0.839	0.744
Painful lesion	12/16 (75%)	11/15 (73%)	1.066	0.935
Recreational drug use	5/16 (31%)	2/15 (13%)	0.427	0.350
Other STI	4/16 (25%)	2/15 (13%)	0.533	0.503
Positive VDRL at presentation	11/16 (69%)	11/15 (73%)	1.067	0.908