

Syphilis: back on the rise, but not unstoppable

Fighting the current epidemic requires intensive education of clinicians and men who have sex with men, as well as targeted screening

A research article (page 179)¹ and a letter to the editor (page 218)² in this issue of the Journal should leave you in no doubt that syphilis is back. After falling precipitously with the onset of the HIV epidemic in the early 1980s, syphilis infection rates are rising dramatically in Australia and the developed world among men who have sex with men.³ Why has this occurred, and what can be done about it?

The prevalence of a sexually transmitted infection (STI) is determined by three factors: the probability of transmission per partnership, the rate of partner change, and the duration of infectiousness. The particular importance of the duration of infectiousness is illustrated by the dramatic 100-fold fall in the prevalence of syphilis following the introduction of antibiotics.⁴ Another example is in situations where access to health care is poor and duration of infectiousness is therefore prolonged, as in isolated Indigenous communities in Australia. In such communities, both syphilis and gonorrhoea are common, despite rates of partner change being similar to those in the rest of Australia.⁵ In contrast, gonorrhoea or syphilis struggle to exist in communities with adequate access to health care, unless the rate of partner change is high.

What then has changed among men who have sex with men to cause this sudden rise in syphilis infections in New South Wales and Victoria?

Sexual behaviour has changed, with rates of any unprotected anal intercourse among men who have sex with men having increased by 50% in Australia over the last 10 years — this was also a strong risk factor for incident syphilis in the Health in Men (HIM) study⁶ mentioned in the research article by Jin et al.¹ Oral sex is also transmitting syphilis, despite being considered relatively safe in terms of HIV transmission. Over half of the men in Jin et al's cases series believed they had contracted syphilis through oral sex,¹ and oral sex has been reported as the sole risk factor in up to 50% of cases reported overseas.³

HIV-positive men who have sex with men appear to be at increased risk of syphilis in Australia, representing between 40% and 54% of the cases reported by Jin et al¹ and Guy et al.² In addition, unprotected anal intercourse with an HIV-positive man was a strong risk factor for incident syphilis among HIV-negative men in the HIM Study.¹ These findings are consistent with overseas reports that syphilis is more commonly diagnosed in HIV-positive men.³

The critical issue is what can be done now to control this epidemic. Clearly, increasing the use of condoms is important, particularly for anal sex. It is unlikely, however, that condoms will be widely used for oral sex, even though this practice is transmitting syphilis. In addition, reducing the rate of partner change is important, but it has been difficult to demonstrate large effect sizes in controlled studies.⁷

Substantially reducing the duration of infectiousness may be possible through educational campaigns, increased screening and

enhanced contact tracing. Intensive educational campaigns for clinicians and men who have sex with men are fundamental for promoting early diagnosis and treatment, and screening high-risk individuals. Remember, most doctors under the age of 45 have not seen a case of syphilis, and young men are also less likely to be aware of the symptoms and clinical presentation of the infection. Educational campaigns that use the Internet can be relatively cheap and effective. For example, one banner advertisement on gay websites resulted in 32 270 click-throughs to public health websites with syphilis information.⁸ The cost per "click" varied from \$0.05 to \$10.⁸

Increased screening is the only way to detect asymptomatic infection; up to 33% of infections reported by Jin et al in the syphilis case series and the HIM study were asymptomatic.¹ Guidelines suggest yearly testing for syphilis for any man who has had sex with another man in the past 12 months.⁹ This is easily justifiable given the syphilis incidence rate of 0.78 per 100 person years among men in the HIM study, but not necessarily easy to implement because it involves reaching all men who have sex with men, not just those attached to the gay community.¹ Screening at every clinic visit for syphilis among HIV-positive homosexually active men may be necessary in view of the higher incidence of syphilis in this group.

STI control is most cost effective if programs are focused on core group members who have large numbers of sexual partners. In the syphilis case series, up to two-thirds of the men had attended sex-on-premises venues or saunas where rates of STI infections have been previously reported to be extremely high.^{1,10}

Contact tracing is an essential part of effective STI control but is difficult among men who have sex with men, whose partners are often anonymous. Nevertheless, innovative programs can prove effective. One study found that contact tracing was relatively effective even though the only identifying information available to public health officials were the "screen names" used in internet chat rooms. In this study, 41 of the 97 contacts of men infected with syphilis were traced through their "screen names".⁸

Lastly, information about the epidemic, including the typical clinical features, who is affected, and risk factors for infection, is critical to inform intervention, as indeed both Jin et al¹ and Guy et al² have shown. For example, Jin et al provided much needed information about the usual clinical presentation of syphilis, finding that rash was the most common symptom (42%), but an ulcer or sore was also common (40%).¹ As the rash of secondary syphilis is extremely infectious, identifying such cases early will significantly improve control.

Australia's response will determine if the current syphilis epidemic is remembered as an isolated epidemic or the return of endemic infection. Endemic syphilis will be expensive; both in human and financial costs, not least because it promotes HIV transmission. We need to learn from Australia's effective and early response to the HIV epidemic that was characterised by commu-

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nity partnership, bipartisan government support, a commitment to harm minimisation and dynamic, original strategies.

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Non-conventional approaches to allergy testing: reconciling patient autonomy with medical practitioners' concerns

It may be difficult for patients to distinguish current concepts of immune function from other, non-conventional explanations of illness

Each year, as many as 50%–70% of adults and children with allergic disease consult alternative practitioners.¹⁻³ Some will undergo unproven diagnostic “allergy testing” as used by some alternative (and some conventionally trained) medical practitioners. The potential for adverse outcomes from using unproven diagnostic techniques is not only insidious but also potentially more serious than the more commonly debated issues surrounding costs,¹ or the risks and benefits of alternative therapies such as naturopathy, chiropractic, acupuncture, homoeopathy or so-called “allergy elimination therapy”.^{4,5} Particular concerns arise when “positive test results” are followed by advice to restrict diet, a practice that our combined clinical experience tells us occurs not infrequently, regardless of the presenting problem — even in cases of asthma, allergic rhinitis or recurrent infection in which food allergy is not considered to play a pathogenic role. Such advice may unnecessarily delay more appropriate therapy and sometimes impair nutrition and growth.⁶

It is not difficult to understand why patients with allergic disease seek help where they can find it. Most people affected by allergic disease are young adults, or parents of young children with eczema, food allergy or allergic respiratory disease — groups that may find concepts of chronicity, and palliation rather than cure, unattractive. Parents of young children may be attracted to non-invasive (“no needles”) allergy testing. Furthermore, the field of allergy and immunology is a non-organ-based specialty, making it difficult for some patients to distinguish current concepts of immune function (or dysfunction) from other, non-conventional explanations of illness. Blurring the meaning of “allergy” to refer to

any perceived response to an environmental agent, and use of the term “impaired immunity” interchangeably with “fatigue” (in the media as well as among some alternative practitioners), is conducive to blending concepts of immunology, neurology and spirituality to explain the pathogenesis of disease by some non-conventional philosophies.⁷ Factors that may contribute to the uptake of unproven diagnostic and therapeutic techniques include congruence with patients' own philosophies about the pathogenesis of some disorders, a desire for autonomy, long waiting lists for specialty allergy services (and the lack of any publicly-funded clinics in some states, such as Tasmania and Queensland), advice from friends and family, internet-derived information (and misinformation) and uncritical media attention.¹⁻³

Some of the non-conventional “allergy” tests in current use arose in the early 20th century, when allergy practice was essentially empirical.⁸ At that time, without mechanistic explanations or reliable tests to confirm an immune origin, disorders with a similar phenotype (eg, allergic and non-allergic urticaria) and some non-specific symptoms (eg, migraines, fatigue) were attributed to allergy, if skin tests were positive, or to “allergic toxæmia”, if results were negative.⁹ Cytotoxic food testing (“Bryans' test”, and the ALCAT variant — whereby a patient's leucocyte morphology is assessed after incubation with food extracts) was one, now considered unconventional, technique to arise from a search for more “reliable” tests to explain these phenomena.⁹ This test continues to be used today, despite evidence that results are not reproducible, are different when duplicate samples are analysed blindly, do not correlate with those from conventional testing, and “diagnose”