Prevalent, treatable and significant: barriers to the control of *Trichomonas vaginalis* in women

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Trichomoniasis is a prevalent sexually transmitted infection (STI) which is more common than *Chlamydia trachomatis* or *Neisseria gonorrhoeae* in most populations of women. In most instances, *Trichomonas vaginalis* can be effectively eradicated using a single dose of an inexpensive antimicrobial agent such as metronidazole or tinidazole. In addition to causing vaginal symptoms in some women, trichomoniasis has been linked with a broad range of reproductive health sequelae including preterm delivery, low birth weight, pelvic inflammatory disease and increased susceptibility to HIV. In men, infection due to *T. vaginalis* has been linked with urethritis but its prevalence and clinical significance has not been well studied. However, treatment of male partners is necessary to prevent reinfection in women.

Although *T. vaginalis* is prevalent, treatable and clinically significant in women, trichomoniasis is often poorly diagnosed and inadequately treated, which leads to reproductive health sequelae and a significant public health burden. In this issue, Lewis et al. report a prevalence of trichomoniasis of 15–34% among 1232 women having vaginal discharge in Johannesburg, South Africa from 2007–2012. In Durban, South Africa, trichomoniasis was detected in 6.5% of 1485 women without symptoms, and the annual incidence of new infections was 8.6 per 100. From the US, Muzny et al. report that 17% of HIV+ women receiving care in Birmingham, Alabama, USA had trichomoniasis, while 17% of women attending emergency departments for care in Ohio had this pathogen. In contrast, investigators in the Netherlands and Australia detected *T. vaginalis* in fewer than 2% of women.

The studies published in this issue highlight that with *T. vaginalis*, gender and socioeconomic status matters. This pathogen is much less often detected in men than in women, with only 0.7% of Australian men, 2% of Japanese men, 4% of US and 3–13% of South African men testing positive for this pathogen. In the US, this pathogen is more common among black versus non-black men and women, and in South Africa and Australia *T. vaginalis* is increased among indigenous populations. In short, trichomoniasis is an STI detected most often among economically disadvantaged people of colour whether they live in Europe, North America, Africa or Australia.

Why hasn’t there been greater success in the treatment and control of *T. vaginalis* over the past 20 years? Diagnosis has been suboptimal in many settings. Although nucleic acid amplification testing is available in research settings, globally the mostly used diagnostic test for *T. vaginalis* is the ‘wet mount’, which involves the direct visualisation of the pathogen under the microscope and which is very insensitive. Although better point of care tests are now available in some settings, most of the women infected with trichomoniasis worldwide are simply never tested or treated, and partner treatment is even more unlikely to occur. The fact that is pathogen is most prevalent in marginalised populations has been a barrier to its control.

There has always been ambivalence about whether trichomoniasis really matters. Donné first discovered and named *T. vaginalis* in 1836 after finding the organism in genital secretions of both women and men, but it was felt to be unimportant since many of the people harbouring the pathogen lacked symptoms. Within the world of STIs and its researchers, *T. vaginalis* has never been the subject of a focused diagnosis and eradication programme such as the ones undertaken for control of chlamydia and gonorrhoea. Because it is disproportionally harboured among women having limited financial resources and access to care, *T. vaginalis* infection can persist for years and the women affected have no recourse but to live with their symptoms. It is likely that many of these women have had persistent infection for so long that they do not report symptoms because their symptoms have become the norm. The result is that this treatable STI continues its spread within sexual networks even though its transmission could be prevented with a few cents worth of generic metronidazole.

The research presented in this special issue provide the opportunity for all of us who work in STI research to recognise that broad screening and treatment programmes for *T. vaginalis* will not be productive. Instead, careful screening and effective treatment should be targeted to those populations where this pathogen is endemic. The financial resources for screening and treatment should be focused in the populations at greatest risk, just as chlamydial screening is targeted for younger women. We cannot make real strides in the control of trichomoniasis until we end our ambivalence about the health consequences and significance of this important STI.

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