Study raises concerns about drug-resistant STI

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Greater understanding of testing and treatment is needed to mitigate the rapid increase in drug resistance of a common sexually transmitted infection (STI), according to a study by the University of Bristol, published in the BMJ Journal of *Sexually Transmitted Infections*.

Mycoplasma genitalium (MG) is an emerging and relatively common STI currently affecting two per cent of young sexually active people.* While the majority of cases are asymptomatic and probably resolve spontaneously without treatment, MG is responsible for 15 to 25 per cent of acute non-gonococcal urethritis (NGU) in men and probably causes cervicitis and pelvic inflammatory disease in women and is associated with an increased risk of tubal factor infertility.

In the UK and USA, NGU, cervicitis and chlamydia have historically been most commonly treated with a single 1 g dose of azithromycin or a seven-day course of doxycycline (100 mg twice a day). However, NGU and cervicitis may be caused by the underlying presence of MG. MG treatment failure rates following azithromycin treatment have increased with time and this is probably due to the emergence of worldwide macrolide antimicrobial resistance in MG.

Dr Paddy Horner and colleagues at the University of Bristol's Population Health Sciences, conducted a meta-analysis to determine rates of MG treatment failure and resistance with different azithromycin treatment regimens.

Commenting on the findings, Dr Horner said:

"MG is the simplest self-replicating organism known to date. Just a single gene mutation can lead to drug-resistance - and MG is becoming drug resistant at an alarming rate, from very low rates in the early 2000s to around 30 to 50 per cent of cases in 2017.

"A number of experts believe the rapid increase in drug-resistant mycoplasma genitalium is a consequence of the extensive use of azithromycin 1 g for the treatment of STIs. This paper quantifies that risk for the first time, suggesting that one in eight (12 per cent) of individuals with MG will develop macrolide resistance when treated with azithromycin 1 g.

"It would therefore seem sensible to reduce the use of azithromycin 1 g for treating sexually transmitted infections, unless MG can be excluded by nucleic acid testing, as used for Chlamydia, before treatment.

"While most infections probably resolve spontaneously without treatment, MG is an important cause of NGU in men and cervicitis and pelvic inflammatory disease in women. The only other antimicrobial with high efficacy in treating MG is moxifloxacin but resistance is also beginning to emerge. It is therefore important that treatment options are preserved for those patients with clinical disease.

"This is a dynamic infection so we could see a rapid escalation in rates of potentially untreatable MG across the population if we don't reduce the use of azithromycin 1 g to treat STIs, in the absence of MG testing."

More information: Patrick Horner et al, Which azithromycin regimen should be used for treating Mycoplasma genitalium ? A meta-analysis, *Sexually Transmitted Infections* (2017). DOI: 10.1136/sextrans-2016-053060

* 2016 European guideline on Mycoplasma genitalium infections - J.S. Jensen, M. Cusini, M. Gomberg, H. Moi.

Provided by University of Bristol