The role of *Mycoplasma genitalium* in non-gonococcal urethritis

Mycoplasmas are the smallest prokaryotes capable of self replication. *Mycoplasma genitalium*, one of 14 mycoplasmas of human origin known so far, was isolated originally from the urethra of two of 13 men with non-gonococcal urethritis (NGU) attending the genitourinary medicine (GUM) clinic at St Mary’s Hospital, Paddington, London, in 1980. By electron microscopy, it was found to be flask shaped, the narrow terminal portion being instrumental in its attachment to eukaryotic cell surfaces. Later, the genome of *M genitalium*, the smallest known for a self-replicating micro-organism, 580 kb, was the first of any genome of human origin known so far, was isolated originally from its attachment to eukaryotic cell surfaces. The role of *M. genitalium* in non-gonococcal disease is uncertain. However, the development of sensitive and specific PCR assays for *M genitalium*, initially by two groups of workers and later by others, each amplifying different fragments of the attachment protein designated MgPa. This has enabled *M genitalium* to be detected reliably in urogenital specimens. In the past 20 years there have been 19 studies, undertaken largely in men attending GUM clinics, in 17 of which the relation of the mycoplasma to acute NGU has been examined by comparison with controls. As shown in table 1, in the majority of studies, *M genitalium* has been detected significantly more often in the urethra of men with acute NGU than in those without NGU; overall, in 19.8% of men with acute NGU and in 8.8% of those without NGU (p < 0.00001; OR 2.84, 95% CI 2.24–3.62). It is not possible in all of the aforementioned studies to assess the relation of *M genitalium* to chlamydia negative NGU, but in 10 studies in which this is assesseable (table 1), the mycoplasma has been found significantly more often in the urethra of men with chlamydia negative disease than in...
M. genitalium is strongly associated with acute NGU, largely independent of C. trachomatis, and there is good evidence that it is a cause

M. genitalium may be associated causally with chronic NGU

The involvement of M. genitalium in genital tract disease of women needs further investigation

Progress in studying M. genitalium should be improved by commercial diagnostic input

ability to obtain isolates through the use of a cell culture system, although difficult and not routine, is to be encouraged. These aspects of antibiotic susceptibility, added to the fact that M. genitalium has the ability to invade epithelial cells and, perhaps, become protected, might account for it sometimes continuing to be found in the urethra following what would seem to be adequate treatment of acute NGU. Suffice to say, the most appropriate treatment of M. genitalium positive acute and chronic NGU needs attention in larger investigations. Apart from NGU itself, the possible role of M. genitalium in some of the sequelae of acute NGU should be considered. The impetus to do this exists in sexually acquired reactive arthritis in which M. genitalium has been detected already in the knee joint of such a patient; its possible involvement in epididymo-orchitis and infertility is also wide open to investigation.

There is a suggestion from limited serological data that M. genitalium infection might, as in the case of C. trachomatis, enhance the transmission of the human immunodeficiency virus. This proposition and the foregoing evidence for M. genitalium behaving as a pathogen in the male urogenital tract and the possibility of its involvement in genitai tract disease in women should be sufficient to foster commercial diagnostic input. The availability of a commercial PCR or ligase chain reaction (LCR) assay would not only introduce greater comparability between studies but take studies of M. genitalium outside the few centres that currently have the necessary technology.

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