

MYCOPLASMAS AND NON-GONOCOCCAL URETHRITIS

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A total of 692 heterosexual males which included 130 men with non-gonococcal urethritis (NGU) and 562 age-matched controls, were studied. Mycoplasmas were cultivated in liquid PPLO medium tubes containing arginine and urea. Mycoplasmas were isolated in 24 (18.5%) of the 130 patients and in 76 (13.6%) of the 562 controls. *Ureaplasma urealyticum* was isolated in 18 (13.9%) patients with NGU and in 21 (3.8%) controls. *Mycoplasma hominis* was isolated in 6 (4.6%) patients with NGU and in 55 (9.8%) controls. *Ureaplasma urealyticum* has a definite role in NGU.

Key words : Non-gonococcal urethritis (NGU), *Ureaplasma urealyticum*, *Mycoplasma hominis*.

Many studies have attempted to establish the cause of non-gonococcal urethritis.¹ The role of mycoplasmas in genital tract infections has remained controversial despite the fact that these organisms have been associated with non-gonococcal urethritis, spontaneous abortion, acute salpingitis, reproductive failures, low birth-weight of infants and similar conditions.²⁻⁴ *Mycoplasma hominis* has been largely dismissed as a causative agent in the disease. *Ureaplasma urealyticum* on the other hand, may be the cause for urethritis in some people,³⁻⁵ and this evidence has been indirectly provided by the fact that chlamydia negative and ureaplasma positive patients responded better to antibiotics than to placebo.⁶ Indeed, the best response to a short course of treatment was seen in patients who possessed only ureaplasma, with or without *Mycoplasma hominis*.

Out of the mycoplasmal flora, *Mycoplasma hominis* and *Ureaplasma urealyticum* are the most commonly isolated species from the human genital tract with or without disease. Whether *Bacteroides urealyticus*⁷ or *M. genitalium*⁸ turn out to be significant causes remains to be seen.

We undertook the present study to define the role, if any of *Ureaplasma urealyticum* and

Mycoplasma hominis in men with non-gonococcal urethritis.

Materials and Methods

Urethral samples were collected from a total of 692 heterosexual males which included 130 men with symptoms of urethritis (except gonococcal), and 562 age-matched healthy males recruited from the medical and paramedical staff and the other patients who acted as controls. The controls had no history or current evidence of urethritis nor had suffered from it in the recent past.

Urethral swabs from patients and controls were either cultured immediately or stored at 4°C until transfer. Samples were inoculated in liquid PPLO medium tubes containing arginine for *M. hominis*, and urea for *U. urealyticum*. The tubes were then incubated at 37°C in 10% CO₂ and examined twice daily for the colour change from yellow to red indicating growth of mycoplasma. As soon as the colour change appeared in these tubes, sub-cultures were made in fresh liquid media and also onto agar plates. The mycoplasmas were finally identified by colony characters and by using differential media containing lincomycin for *U. urealyticum* and erythromycin for *M. hominis*.⁹

Results

Mycoplasmas were isolated in 24 (18.5%) out of 130 patients and 76 (13.6%) out of 562

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healthy controls. Of the 24 isolates of genital mycoplasma from urethritis patients, 6 (25%) were *Mycoplasma hominis* and 18 (75%) *Ureaplasma urealyticum*, whereas of the 76 isolates from healthy men, 55 (72.4%) isolates were *Mycoplasma hominis* and 21 (27.6%) were *Ureaplasma urealyticum*. Thus, *Ureaplasma urealyticum* was isolated in 18 (13.9%) patients with NGU and in 21 (3.8%) controls ($p < 0.001$), and *Mycoplasma hominis* was isolated in 6 (4.6%) patients with NGU and 55 (9.8%) controls ($p < 0.10$).

Comments

Out of the various causes of NGU, genital strains of *Chlamydia trachomatis* account for approximately 50% cases and *Ureaplasma urealyticum* for a smaller unspecified number of cases.¹⁰ *Mycoplasma hominis* has not been confirmed to be an etiologic agent in NGU.¹¹⁻¹³ Our study showed that it was more frequently isolated in the controls than the patients with NGU. These strains may in some carriers assume pathogenic role under altered local or systemic conditions.¹⁴ Another possibility is, that only certain serotypes are pathogenic or of low invasiveness and clinical disease occurs in only a small proportion of the exposed men.¹⁵

Ureaplasma urealyticum has been isolated in 19-85% of the patients with NGU and the average isolation rates are around 50-60%.¹⁶ However, low isolation rates comparable to our findings have also been reported viz 19%, 21% and 31%.¹⁷⁻¹⁹ Mukhija et al²⁰ isolated *U. urealyticum* in 60% patients with NGU and in 11% controls. The isolation rates in a previous study from our institute were 57% in NGU and 32.6% in patients attending the STD clinic. The isolation rates of *U. urealyticum* are affected maximally by the sexual experience and the number of partners¹¹ and it is not easy to obtain controls with comparable sexual experience. Recently, the significance of the total number of organisms isolated and the presence or

absence of concomitant chlamydia infection has been highlighted.¹⁶

Ureaplasma urealyticum has also been associated with recurrent urethritis experienced by a selected group in stable conjugal relationship.²¹ Though *U. urealyticum* has a definite pathogenic potential for producing urethritis in a selected group of patients, absence of disease in the presence of *U. urealyticum* in a percentage of people is difficult to explain. Possibly some strains become pathogenic for a limited period of time.

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