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## Microbiological Study on Male Urethritis

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**Abstract:** *C. trachomatis* is found in 37% of patients with urethritis. It is found either concurrently with *N. gonorrhoeae* or alone in case of NGU. Other organisms were also isolated from the urethral discharge of patients. History of trachoma does not affect the rate of infection with chlamydia.

**Key words:** Non-gonococcal urethritis (NGU), chlamydia trachomatis (*C. trachomatis*), Neisseria gonorrhoeae (*N. gonorrhoeae*), trachoma

### Introduction

Sexually transmitted diseases are a group of communicable diseases that are transferred by sexual contact. They are now the commonest group of notifiable infectious diseases in most countries. In the male, urethritis is the commonest type of such diseases. It can be caused by a number of organisms. The commonest cause are Chlamydia trachomatis and Neisseria gonorrhoea. This study is intended to investigate causes of urethritis in males in Iraq.

### Materials and Methods

**Patients:** Eighty one patients who complained of urethral discharge and dysuria of various durations were included in the study. Information such as age, marital status, duration, previous urethritis or trachoma were obtained.

**Collection and processing of specimens:** All patients had not urinated for 1 h before collection of specimens. Urethral discharge was obtained with a sterile wire loop after thorough cleaning of the external meatus. A wet smear, Gram-stained smear and cultures on chocolate agar, blood agar and MacConkey agar were made from each specimen. A flexible swab was inserted approximately 2-4 cm into the urethra and was rotated firmly for 5-10 sec. Smears were prepared and used for detection of *Chlamydia trachomatis* by the direct fluorescent antibody technique (Biomeriux) following the manufacture's instructions.

Chocolate and blood agar plates were incubated under CO<sub>2</sub> and MacConkey agar plates were incubated aerobically. All plates were incubated for 48 h at 37°C and organisms were identified by conventional methods.

### Results

The peak occurrence of the disease whether it was gonococcal or non-gonococcal was in the age group 20-

Table 1: *Chlamydia trachomatis* in patients with gonorrhoea or NGU

	G.C		N.G.U	
	No.	%	No.	%
<i>C. trachomatis</i>				
Present (Total 30)	10	34.48	20	38.46
Absent (Total 51)	19	65.52	32	61.54

Table 2: Organisms isolated from patients with chlamydia-positive and chlamydia negative urethritis

Organisms isolated	Chlamydia+ve		Chlamydia-ve	
	No.	%	No.	%
<i>N.gonorrhoea</i>	10	33.4	19	37.3
<i>Coagulaseve Staph</i>	23	76.7	42	82.3
<i>Staph. aureus</i>	0	0.0	0	0.0
<i>E. coli</i>	1	3.4	4	7.8
<i>Gardenerella vaginalis</i>	1	3.4	6	11.7
<i>Strep. viridans</i>	4	13.4	8	15.7
<i>Trichomonas vaginalis</i>	0	0.0	0	0.0
<i>Candida</i> Sp.	11	36.7	19	37.2%
Chlamydia+ve 30 cases	Chlamydia-ve 51 cases			

Table 3: The effect of previous history of trachoma on the detection of *Chlamydia trachomatis* in patients with urethritis

History of trachoma	Chlamydia No.	Positive%
Present (30)	16	53.33
Absent (51)	14	27.45

Table 4: The effect of previous history of trachoma on the detection of *Chlamydia trachomatis* in patients with NGU (the 29 patients who were positive for *N. gonorrhoeae* were excluded)

History of trachoma	Chlamydia No.	Positive%
Present (18)	8	44.44
Absent (34)	12	35.29

29 and the incidence declined thereafter. Gonorrhoea was common in single while NGU was commoner in married patients (Data not shown).

Of the 81 patients with urethral discharge who were examined by the immunofluorescent method for chlamydia and by culture for other microorganisms, 30 (37%) were positive for chlamydia. Furthermore, Chlamydia trachomatis may be present alone in patients with non-gonococcal urethritis or in association with Neisseria

gonorrhoea in patients with G.C. (Table 1). This table shows that 10 out of 29 patients with G.C. (34.48%) concurrently harbored *C. trachomatis*. Also, 20 out of 52 (38.46%) patients with NGU carried *C. trachomatis*. Other organisms may also be isolated from the urethral discharge whether *C. trachomatis* was present or not (Table 2). Many of these organisms may not contribute to the symptoms.

The effect of a previous history with trachoma on presence of *C. trachomatis* in patients with urethritis (Gonococcal or non-gonococcal) is shown in Table 3. While the effect of a previous history of trachoma on presence of *C. trachomatis* in patients with non-gonococcal urethritis is shown in Table 4. Previous history with trachoma did not seem to decrease the incidence of the organisms.

### Discussion

It is not unexpected to find the peak incidence of urethritis in the age group 20-29 since it is the sexually active age group. This agrees with the results of Rotimi and Somorin (1980), Blackwood (1981) and Pareek and Chowdhury (1981). Perroud and Miedzybrodzka (1978) found that marital status did not decrease the incidence of G.C. This contrasts with the results of the present study. In middle eastern societies promiscuity is uncommon in married couples.

Urethritis in men is usually sexually contracted. The usual causative pathogens are *N. gonorrhoeae*, Chlamydia trachomatis and Ureaplasma urealyticum. No attempt was made to isolate the latter organism in this study. More than one third of the patients had gonorrhoea and the rest had NGU. Many other studies have also found that the incidence of NGU was higher than G.C. (Al-Khatib, 1976; Rotimi and Somorin, 1980 and Pareek and Chowdhury, 1981). Patients with G.C. could also harbor *C. trachomatis* simultaneously. *Neisseria gonorrhoea* was also isolated from almost one third of chlamydia positive cases. This is in agreement with others who found that the two organisms may be found concurrently (Holmes *et al.*, 1975. Richmond and Sparling, 1976 and Alani *et al.*, 1977). It has been estimated that between 20-60% of patients infected with G.C. are also infected with *C. trachomatis*. Dual therapy or a single agent that acts against both has been suggested for treatment (Anonymous, 2001). Both azithromycin and doxycycline were found effective for the treatment of non-gonococcal urethritis and Chlamydia trachomatis cervicitis in the female (Tann and Chan, 1999). In this study, *C. trachomatis* was found in 38.46% of patients with NGU. Others (Dunlop *et al.*, 1972; Holmes *et al.*, 1975 and Oriet *et al.*, 1976) found *C. trachomatis* in 50% of patients with NGU., while it was found in 30.1% of

patients by Alani *et al.* (1977) and in 18.4% of patients by Al-Khatib (1976). There was no difference in clinical picture between patients with NGU who were chlamydia positive or chlamydia negative. Holmes and Mardh (1983) raised the question of the effect of previous or current trachoma on infection of the genital tract with *C. trachomatis*. This study has shown that presence of *C. trachomatis* was high in the presence of history of trachoma whether patients had gonococcal or non gonococcal urethritis. Serovars which cause trachoma do not seem to confer immunity for those that cause genital infections.

However, larger number of patients need to be investigated to evaluate this finding.

In addition to *N. gonorrhoeae* and chlamydia, many other organisms can be isolated from the urethral discharge. Many of these may not have relevance to the condition. Trichomonas vaginalis was not demonstrated in any of the patients. While Wisdom and Dunlop (1965) and McCam (1974) found *T. vaginalis* in urethral discharge, prostatic fluid or seminal fluid in 5-10% of patients with NGU.

Trichomonas vaginalis is emerging as one of the important co factors in amplifying HIV transmission. It may increase HIV shedding and expand the portal of entry for HIV in an HIV-negative person Sorvillo *et al.* (2001). Candida sp. were isolated from Chlamydia positive or negative NGU. Few studies incriminate *Candida* sp. in the aetiology of male NGU (Parker, 1970).

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