

Original Research Article

Male urethritis with or without discharge: a clinico aetiological study in Hi-tech Medical College and Hospital Bhubaneswar, Odisha

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ABSTRACT

Background: Urethritis or inflammation of the urethra is a multifactorial condition. Urethritis is called gonococcal urethritis (GU) when *Neisseria gonorrhoeae* is detected in urethral smear of the patient and nongonococcal urethritis (NGU) when this organism cannot be visualized.

Methods: Urethritis cases were identified from the dermatology OPD record. A retrospective analysis of data of patients diagnosed as GU and NGU for a period of 5 years (from August 2012-July 2017) was made. We have included only male patients more than 10 year.

Results: *Neisseria gonorrhoeae* (61.42%) and *Chlamydia trachomatis* (45.9%) were the most common causative organism among urethritis and nongonococcal urethritis (NGU) respectively. *Chlamydia* urethritis had been confirmed by demonstrating ≥ 5 polymorphonuclear lymphocytes (PMNLs) from the anterior urethra using a Gram stained urethral smear. Acute condition (7-14 days) more common in GU. Dysuria and purulent urethral discharge (68.6%) was more common in GU. In urine specimen pus cells count were more than 10. The most common age group was 21-30 year (42.86%). Most patients were from low socio-economic status (62.85%). Sexual exposure was more common in unmarried patients (94.74%). Heterosexual exposure (93.75%) was more common. Urethritis was also associated with other infection in 18 patients.

Conclusions: Urethritis is inflammation of urethra which is manifested by dysuria with or without urethral discharge. Though there is increased incidence of *Chlamydia* infections, still now Gonococcal infection is the most common cause of urethritis.

Keywords: Urethritis, Male, GU, NGU, Discharge

INTRODUCTION

Urethritis or inflammation of the urethra is a multifactorial condition, which is primarily sexually acquired. It is characterized by discharge and/or dysuria but may be asymptomatic. Urethritis is called gonococcal urethritis (GU) when *Neisseria gonorrhoeae* is detected in urethral smear of the patient and nongonococcal urethritis

(NGU) when this organism cannot be visualized; most common is *chlamydia trachomatis*.¹⁻³

Objectives

- To study the cause of urethritis.
- To study the causes of NGU.
- To study the epidemiology and clinical presentation of male urethritis.

METHODS

After getting permission from Ethical Committee, we had approached Medical Records Department, Hi-Tech Medical College, for Skin and VD Outpatient Department register from August 2012 to July 2017. Then we had short-listed all male patients from the register and out of which only Urethritis cases were identified. A retrospective record based analysis of patients diagnosed GU and NGU for a period of 5 years (from August 2012–July 2017) was made. We had included all male patients more than 10 years, anyone who had positive in anyone of the investigations such as with urethral smear examination for gram negative ICDC, Pus C/S and modified Thayer Martin culture medium for *N. gonorrhoea*. Urine test followed by urine polymerase chain reaction (PCR) for *Chlamydia trachomatis*. Tzanck smear followed by serum herpes IgG and IgM for herpes infection. Wet mount preparation for *Trichomonas vaginalis*. Gram positive yeast cell from urethral smear for candida infection. VDRL and HIV for associated infection.

We have excluded female patients, and male patients without investigation report. Boys less than or equal to 10 years were not included in this study. The data recorded in OPD Register was analyzed using Microsoft Excel software.

RESULTS

Among total male urethritis patients, *Neisseria gonorrhoeae* was the most common (61.42%) causative organism (Table 1). *Chlamydia* (45.9%) was the most common cause of non-gonococcal urethritis (NGU) (Table 2). In three patients co-infection of GU and NGU were seen Figure 1. Urethritis had been confirmed by demonstrating ≥ 5 PMNLs from the anterior urethra using a gram stained urethral smear. Acute conditions (7-14 days) were more common in GU than NGU. Dysuria and purulent urethral discharge (68.6%) was seen in male urethritis and this was more common in GU, Table 3 and Figure 2 and 3. Whereas mucoid or muco-purulent with dysuria was more prominent in NGU (Table 4). Acute conditions (7-14 days) are more common in male urethritis (Table 5). In urine specimen pus cells count were more than 10. The most common affected age group was 21-30 year (42.86%) followed by 31-40 age groups (Table 6). In our study most patients were from low socio-economic status (62.85%) (Table 7), history of sexual exposure was more common in unmarried patients (94.74%) (Table 8) heterosexual exposure (93.75%) was more common (Table 9). Homosexual exposure was seen in four patients. Among homosexual one was PCR positive chlamydia. Urethritis was associated with genital ulcer, genital herpes, genital wart, candida balanitis in 14 patients, Figure 4, 5 and 6 Also there were association of lymphadenopathy, syphilis and hypospadias in 4 patients. Two patients were associated with HIV. Infection and three patients were associated with VDRL positive.

Table 1: Aetiological agent male urethritis.

Microorganisms	Cases (N=70)	Percentage (%)
<i>N. gonorrhoeae</i>	43	61.42
<i>C. trachomatis</i>	11	15.71
<i>Candida albicans</i>	05	7.14
<i>Gonococci and Chlamydia</i>	03	4.3
<i>Herpes 1 and 2</i>	02	2.86
<i>Trichomonas vaginalis</i>	02	2.86
Others (<i>S. cocci</i> , SJS)	04	5.71

Table 2: Non gonococcal urethritis organism.

Microorganisms	Cases N=24	Percentage (%)
<i>C. trachomatis</i>	11	45.9
<i>Candida albicans</i>	05	20.8
<i>Herpes 1 and 2</i>	02	8.3
<i>Trichomonas vaginalis</i>	02	8.3
Others (<i>S. cocci</i> , SJS)	04	16.7

Table 3: Symptoms of male urethritis

Complaints	Cases	Percentage (%)
Dysuria	16	22.85
Dysuria and urethral discharge	48	68.6
Urethral discharge	06	8.55

Table 4: Type of discharge.

Discharge	Cases	Percentage (%)
Scanty mucoid	20	28.57
Moderate mucopurulent	30	42.86
Frank purulent	04	5.71
No discharge	16	22.86

Table 5: Clinical categories of cases according to duration.

Type of urethritis	Cases	Percentage (%)
Acute (7-14 days)	48	68.6
Sub acute (15-28 days)	10	14.2
Chronic (more than 28 days)	12	17.2

Table 6: Age of incidence among male urethritis.

Age group in years	Cases	Percentage (%)
11-20	6	8.57
21-30	30	42.86
31-40	20	28.57
41-50	08	11.43
51-60	04	5.72
More than 60	02	2.85

Table 7: Socio economic grading.

Grading	Cases	Percentage (%)
Poor	44	62.85
Middle class	22	31.44
Upper class	04	5.71

Table 8: History of exposure.

Marital status	No of cases	No of exposure	Percentage (%)
Married	32	28	87.5
Unmarried	38	36	94.74

Table 9: Type of exposure.

Exposure	Cases	Percentage (%)
Heterosexual	61	93.75
Homosexual	04	6.25



Figure 1: GU and chlamydia discharge.



Figure 2: Gonococcal discharge.

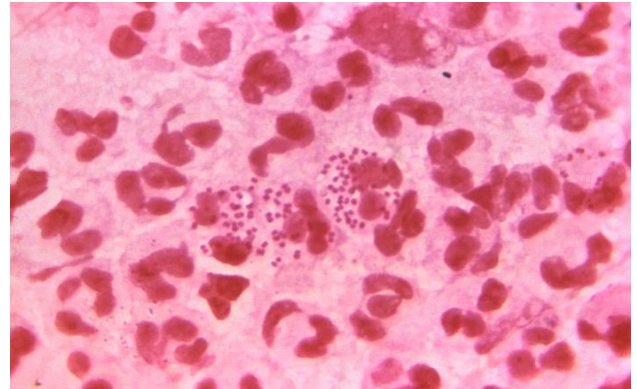


Figure 3: Gram negative diplococci from urethral swab.



Figure 4: Urethritis with candida balanitis.



Figure 5: Urethritis with genital ulcer.



Figure 6: Urethral discharge with genital wart.

DISCUSSION

Nayak et al study shows that GU was the most common cause of urethritis followed by chlamydia infection. Among NGU, *Chlamydia trachomatis* was the most common cause.⁴ In our study *Neisseria gonorrhoeae* was also the most common cause of urethritis followed by chlamydia infection. Similar study was also seen in Saleem et al article.⁵ There was a co-infection of GU with chlamydia, similar study was also shown by Saleem et al and Nayak et al.^{4,5} Debattista et al also mentioned association with gonococci and chlamydia.⁶ Hakenberg et al showed that, chlamydia infection was the cause of 25-50% male urethritis.⁷ In our study 57 patients did not give history of use of condom. Nayak et al also told that almost 75% had no history of use of condom.⁴ In our study, dysuria with urethral discharge was seen in 68.6% patients and mucoid discharge with or only dysuria was more common in NGU. Same study was done in Thailand by Leeyaphan et al.⁸ Only dysuria seen in 73% NGU patients by Bradshaw et al study.⁹ We found only dysuria in 16 patients (22.85%). Fourteen NGU patients (58.3%) had PMNL more than or equal to 5 in urethral swab. Karachi study and Haddow et al mentioned same.^{5,10} Thailand study also mentioned PMNL more than 5.⁸ Few patients had less than 5 PMNL in their urethral swab. Similar study also done by Bradshaw et al.⁹ In European study 2016, it has been mentioned that chlamydia infections are associated with PMNL more than or equal to five from urethral swab.¹¹ Our study also mentioned PMNL count was more than or equal to five in urethral swab for positive chlamydia infections. Two patients (2.86%) were due to herpes simplex 1 and 2 infections. European study also mentioned 2-4% of NGU was due to herpes simplex type 1 and 2.¹¹ Three percentage of herpes 1 and 2 infections were seen among NGU by Bradshaw et al study.⁹ Most common age group was 21-30 years and maximum patients were from low socio economic group. E-medicine, Medscape data 2015 from United states also mentioned low economic group and 20-24 yrs age group were more common.¹² Nayak et al also mentioned labourer group were 30% and common age group was 20-25yrs,⁴ Mohanty et al also found low economic group were more common in their study.¹³ We had seen homosexual in 04 patients. Nayak et al also mentioned anal sex in 8% patients.

We observed heterosexual exposure in 93.75% patients. Four patients had history of homosexual exposure with one PCR positive chlamydia, whereas Nayak et al showed 91% heterosexual and 8% bisexual.⁴ Bradshaw et al also mentioned homosexual in urethritis and it was more common in herpes infections.⁸ Vigneswaran et al described that homosexual was 39% in their study.¹⁴ Unmarried patients have more sexual exposure than married patients. Nayak et al and USA data e-medicine also mentioned same.^{4,12} Associated features like genital ulcer, wart, lymphadenopathy, fever were present in our study. Thailand and Nayak et al study also shown similar presentations.^{4,8} Acute presentation (1-2 wks) was more

common in GU and chronic presentation was more common in chlamydia. Similar presentation had been mentioned in Horner et al study.¹⁵ We did not get any *Mycoplasma genitalium* from urethral swab. Nayak et al also mentioned that they did not get any *Mycoplasma* from urethral swab but *Mycoplasma* is more common in western areas.⁴ In our study there was no disseminated GU. We found lesser percentage of herpes genitalis and *Trichomonas vaginalis*. Bradshaw et al mentioned 3% association with herpes infections.⁹ Saleem et al described 4% *Trichomonas vaginalis* in their study.⁵ Also there was HIV positive in two patients and VDRL positive in three patients. Thappa et al and Laga et al also describe similar association in their studies.^{16,17} Vigneswaran et al mentioned that there was association of HIV infection with urethritis.¹⁴ Similar findings were also mentioned by Thailand study.⁸

CONCLUSION

Urethritis is inflammation of urethra which is manifested by dysuria with or without urethral discharge. Though there is increased incidence of chlamydia infections, still now gonococcal infection is the most common cause of urethritis.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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