INTRODUCTION

Urethritis is an inflammation of the urethra. Infectious causes of urethritis are typically sexually transmitted. It is broadly divided into gonococcal and non-gonococcal urethritis (NGU). Urethritis may occur in any sexually active person, but incidence is highest among people aged 20-24 years. Worldwide, approximately 62 million new cases of gonococcal and 89 million new cases of non-gonococcal urethritis (NGU) are reported each year. The incidence of gonorrhea is still common in a number of urban centers in the world. In developing countries, the majority of cases of urethritis are due to Neisseria gonorrhoeae, causing 53-80% of cases. There is limited data regarding frequency and reporting of urethritis in Pakistan.

Neisseria gonorrhoeae causes both symptomatic and asymptomatic genital and extra genital tract gonococcal infections resulting in a wide spectrum of clinical presentations. There has been a gradual increase in the number of antibiotic resistant mutants with reports describing resistance to quinolones. There is also considerable overlap between the symptoms of gonococcal and other non-gonococcal urethritis (NGU), most notably those due to Chlamydia trachomatis. It is thus difficult to establish an etiological diagnosis of urethritis on clinical grounds alone. Incidence of NGU is reported to be on the rise in different parts of the world. Patients with NGU usually have a longer incubation period compared to those with gonococcal urethritis. The onset of either dysuria or a mucopurulent discharge is subacute and such patients are much more likely to be asymptomatic.

Non-gonococcal urethritis is caused by Chlamydia trachomatis (15-55% of cases), ureaplasma urealyticum (40-60% of cases), mycoplasma hominis (5-10% of cases), and Trichomonas vaginalis (< 5% of cases). Rare cases may be related to lymphogranuloma venereum, herpes simplex, syphilis, mycobacteria, or urinary tract infection with urethral stricture. Other rare
but reported causes of NGU include anaerobes, adenovirus, cytomegalovirus, and streptococcus.\textsuperscript{15}

Although urethritis is a common complaint, there is a paucity of studies regarding the etiology and frequency of urethritis in our population. There has been only one such local study so far which has addressed this issue.\textsuperscript{16}

The objective of the current study was to find out the etiology and frequency of different types of urethritis in adult males.

**METHODOLOGY**

The study was conducted at PNS Shifa Hospital, Karachi, from June 2004 to December 2007. It was a case series. One hundred male patients above 16 years of age having complaints of urethral discharge and dysuria, reporting in the skin out patient department were included in the study. Patients who had received systemic antibiotic treatment for these complaints or for other systemic infections during last 2 weeks were excluded. Detailed history including history of illicit sexual contact was taken. General and systemic physical examination was carried out in all the patients. Dermatological examination including examination of external genitalia was also done. In all these patients, urine biochemical and microscopic examination was done. One swab was smeared on a glass slide and was seen under microscope for the presence of Gram-negative diplococci after Gram staining. Another swab was cultured upon chocolate agar containing vancomycin in an atmosphere of 5\% CO\textsubscript{2} at 37°C for 24-48 hours. Endo-urethral swab was taken with urethral loop for seeing Chlamydia antigen by fluorescent microscopy. Material was collected by passing a cotton wool-tipped wire swab, about 1-2 cm into the urethra rotating once and then withdrawing it gently. Cultures for ureaplasma were also carried out. Wet mount specimen microscopy was done for Trichomonas vaginalis. In all the patients, HIV (serum ELISA) test was carried out after informed consent. Mycoplasma culture could not be done due to unavailability of culture medium. All these tests were done on government expenses. The criteria used for non-gonococcal urethritis was more than 5 polymorphonuclear leucocytes per high power field in at least 5 fields of Gram stained urethral smear in absence of Gram negative diplococci.

Data analysis was performed through SPSS version 12.0. Frequencies and percentages were computed to present all categorical variables such as presenting symptoms and duration. Age was presented as mean ± SD.

**RESULTS**

A total number of 100 patients having urethral discharge were studied. All the patients were males. The ages ranged between 20 to 40 years, the mean age being 29.2 ± 5.8 years. A majority of the patients (60\%) seen were in the age group of 21-30 years. History of illicit sexual exposure was available in 25 (25\%) patients. The period of onset of symptoms and reporting of patient in gonococcal urethritis ranged from 4 to 30 days with a mean of 12.8 days and a median of 12 days, whereas it was 4 days to 2 months in non-gonococcal urethritis, with a mean of 20.7 days and median of 20 days. Seventy (70\%) cases were diagnosed as gonococcal urethritis and 30 (30\%) cases as non-gonococcal urethritis (NGU) on Gram staining followed by culture. Patients with gonococcal urethritis presented with purulent discharge in 66 (84\%) cases, and dysuria in 49 (70\%) cases. In the non-gonococcal group, 25 (80\%) cases had mucoid discharge and 18 (65\%) cases had dysuria. Out of 100 patients of urethritis, Neisseria gonorrhoeae was isolated in 70 patients, Chlamydia Trachomatis in 16, ureaplasma in 8, and trichomonas vaginalis was isolated in 4. No organism could be grown in 2 (2\%) cases (Table I). HIV test was not positive in any case.

**Table I**: Frequency of various types of urethritis.

<table>
<thead>
<tr>
<th>Causative organism</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Gonococcus</td>
<td>70%</td>
</tr>
<tr>
<td>Chlamydia</td>
<td>16%</td>
</tr>
<tr>
<td>Ureaplasma anaericum</td>
<td>8%</td>
</tr>
<tr>
<td>Trichomonas vaginalis</td>
<td>4%</td>
</tr>
<tr>
<td>Unknown</td>
<td>2%</td>
</tr>
</tbody>
</table>

**DISCUSSION**

This study was aimed to determine the etiology and frequency of different types of urethritis in male patients. This study has been carried out at a dermatology centre, where a number of 100 patients of urethritis is considered as a fairly large number.

The two most common organisms associated with urethritis in males were Gonococci and Chlamydia. Less common infections such as Ureaplasma, Trichomomas, Herpes simplex virus and the human papilloma virus can also cause urethritis.\textsuperscript{17} Gonococcal urethritis presents with frank pussey discharge and dysuria. Non-gonococcal urethritis is characterized by a mucoid or purulent urethral discharge. It may be diagnosed by greater than or equal to 5 polymorphonuclear leukocytes per oil immersion field without diplococci on a smear of an intra-urethral swab specimen, either in the presence or absence of a discharge.\textsuperscript{18} Passage of urine may flush out urethral polymorphs, thus yielding a false negative result. Microscopy should preferably be performed at least 4 hours after the man has last voided.\textsuperscript{19}

Based on clinical experience and observation, it is seen that most non-gonococcal urethritis cases are treated without eliciting the specific cause, probably due to the
lack of appropriate laboratory facilities. There are several reports in literature regarding prevalence of gonococcal and non-gonococcal urethritis, mostly from Western countries. Gonococcal urethritis was found to be the commonest type of urethritis in this study. The frequency was 70%. This is similar to certain other studies from India and other parts of the world where the frequency has been 53-80%.20 This is probably due to widely available facilities to find out gonococci by Gram staining and culture. The frequency of non-gonococcal urethritis in this study was 30%. This is less than certain western studies where the frequency has been 50%,21 probably due to increased availability of laboratory facilities to isolate various organisms causing NGU in Western countries. Chlamydia trachomatis is the most frequent cause of NGU in this study, with a frequency of 53%, which is similar to certain other Western studies (23%-55%).22 Some studies have shown that patients with gonococcal urethritis frequently have concurrent infection with Chlamydia trachomatis.23 The high prevalence of concurrent gonorrhoea and Chlamydia, therefore, warrants empirical treatment and/or testing for Chlamydia in all men with urethral gonorrhoea.24 Ureaplasma urealyticum was seen in 26% of cases, and Trichomonas vaginalis in 13%. Despite a sharp decline in the incidence of gonococcal urethritis in developed countries during the last decade, it remains a significant public health problem in developing countries.25 The problem is further compounded by the development of antimicrobial resistance in Neisseria gonorrhoeae.26 This study also showed a still high prevalence of gonococcal urethritis. HIV test was negative in all the urethritis patients indicating a low frequency of HIV in such patients. Promiscuous or unprotected sex is a significant risk factor for urethritis or other sexually transmitted diseases (STDs). In our society, a history of illicit sexual contact is difficult to obtain. In this study, it was available only in 25% of cases, whereas others strongly denied it. The period of onset of symptoms and reporting of patient was longer in non-gonococcal urethritis than gonococcal urethritis, probably due to less severity of symptoms in non-gonococcal urethritis.

CONCLUSION

Gonococcal urethritis was the commonest cause of urethritis in this case series, followed by Chlamydia infection.

REFERENCES


