Factors associated with regular episodes of dysuria among women in one rural general practice

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SUMMARY. The aim of this study was to ascertain the factors associated with frequency–dysuria (urethral) syndrome in a population of women. The study included all women aged 25 years and over on 1 May 1987 who had been registered with one rural, dispensing practice over the study period, 1 May 1985 to 1 May 1989. A self-administered questionnaire was sent to the women on 1 May 1987 and a second, similar, questionnaire was sent two years later. A total of 721 women responded to the two questionnaires (response rate 97%). Regular symptoms of frequency and dysuria were reported by 8% of women in 1987 and 14% in 1989. Four per cent of women reported symptoms throughout the four year study period. Symptoms were found to be least common in the 55–74 years age group. Although none of the women who were sexually inactive reported regular symptoms no association was reported between recent sexual intercourse and symptoms. Neither was an association demonstrated between type of contraception used and symptoms. However, it was found that premenopausal women reported significantly more symptoms than postmenopausal women. The number of women involved in this study was too small to allow the importance of change of sexual partner to be determined. Significantly more of the women who reported regular symptoms had been treated for urinary tract infection than of those who did not report regular symptoms.

Although a history of regular frequency and dysuria points to a diagnosis of urethral syndrome, general practitioners must assess each case in order to exclude urinary tract infection.

Introduction

THE Medical Research Council's definition of urethral syndrome is a clinical syndrome, often called cystitis, consisting of frequency and dysuria. Women complaining of frequency and dysuria, but who do not have evidence of urinary tract infection, that is, pure growth bacteriuria of greater than 10^8 organisms per litre and/or a leucocyte concentration of more than 10^6 per litre of urine, are said to have urethral syndrome or the frequency–dysuria syndrome.

The prevalence of urinary frequency and dysuria in women is known.[1-4] Previous work has established the prevalence of the frequency–dysuria syndrome,[5] postulated its causes,[6-8] suggested, compared and assessed treatment regimens,[9-11] and attempted to define associated factors.[7,12,13] The natural history of the complaint, however, has not been addressed other than to state that it is a self-limiting condition.[5]

Symptoms suggestive of urinary tract infection and cystitis account for six consultations a year for every 100 women at risk.[2] Nearly 50% of women patients who complain of frequency and dysuria, however, have no evidence of infection in their urine.[3,4,13,14] The aetiology of urethral syndrome is obscure and has been attributed to associated anxiety neurosis,[7,8] *Chlamidia trachomatis* infection[15,16] or slow growing, CO_2 dependent, gram positive pathogenic organisms.[6] Other studies have demonstrated no causative association between the urethral syndrome and *Chlamydia trachomatis,* fastidious organisms or *Neisseria gonorrhoea.*[5,13,17,18] The aim of this study was to examine the natural history and possible aetiological factors in recurrent urethral syndrome.

Method

The study was carried out in a rural, dispensing practice with two partners. The study subjects were women born before 1 May 1962 who were registered with the practice over the study period (1 May 1985 to 1 May 1989). For all women registered with the practice a record was kept of consultations for urinary symptoms and vaginal discharge over the study period. Results of mid-stream urine analyses and high vaginal swabs were also recorded. Reported changes in the marital status of all women were noted.

A self-administered postal questionnaire was sent to the women on 1 May 1987[19] and a second, similar, questionnaire on 1 May 1989. The questionnaires related to the previous two year period and asked for the women's age, marital status and any change in marital status, parity, sexual activity, method of contraception, and date of last menstrual period. The women were also asked whether they had had episodes of urinary frequency and/or dysuria ('need to pass urine more frequently than usual' and/or 'stinging of urine') lasting two days or more, how often they had suffered from these symptoms in the previous two years (more than 12 times, seven to 12 times, one to six times or never), whether they had had a urinary tract infection or vaginal infection, whether they had received treatment for vaginal discharge or a urinary tract infection, and whether they had noticed any association between symptoms and recent sexual intercourse. Responses to questions relating to consultation with the doctor for urinary tract infection or vaginal discharge were validated using the patients' clinical records. All the records of those women who replied positively were checked together with a random 20% sample of those who reported that they had not consulted.

At the time of the validation a letter was sent to the women whose records were validated requesting a mid-stream urine sample. The sample was examined in the surgery for protein, blood and nitrites to identify infection. Those samples which proved positive for protein, blood or nitrites were sent to the laboratory for further analysis.

The replies to the two questionnaires were compared and the data analysed using a standard SPSS-X package. Patients were initially grouped in 10 year age bands for the purposes of analysis but were later aggregated further because of the small numbers involved.

Results

A total of 744 women patients fulfilled the selection criteria and of these 721 responded to the two questionnaires (response rate of 97%). The patients' claims relating to consultations were validated by the medical records in 98% of cases. Urine analysis was performed for 219 of the 254 women (86%) and in only

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one case was urinary tract infection confirmed by the laboratory.

For the period 1985–87 60 of the 721 women (8%) reported regular episodes of both urinary frequency and dysuria (seven times or more in two years). A total of 101 women (14%) reported regular symptoms for the period 1987–89. Twenty nine women (4%) reported that they had suffered symptoms regularly throughout the four year period. Thus, 31 women (4%) who reported regular symptoms in the first questionnaire improved during the second study period while 72 women (10%) who reported no regular symptoms initially deteriorated and reported regular dysuria and frequency in the second questionnaire.

The relationship between age and reported episodes of the urethral syndrome is shown in Table 1. Significantly more women in the younger age groups (25–34 and 35–54 years) reported persistent recurrent symptoms and fewer reported no regular symptoms than those in the older age groups (55–74 and 75 years plus).

Table 1. Relationship between reported episodes of urethral syndrome and the women's age, whether they were pre- or post-menopausal, their parity and the type of contraceptive used.

	% of women reporting regular symptoms			
	In both questionnaires	In second questionnaire	In first questionnaire	In neither questionnaire
Age (years)				
25–34 ($n=145$)	6	12	3	78
35–54 ($n=331$)	5	10	7	78
55–74 ($n=194$)	1	7	1	91
75+ ($n=51$)	2	12	2	84
	$\chi^2 = 44.9$, df = 21, $P<0.001$			
Pre/post menopause				
Premenopausal ($n=426$)	5	12	5	78
Postmenopausal ($n=295$)	2	8	3	87
	$\chi^2 = 9.8$, df = 3, $P<0.05$			
Parity				
Nulliparous ($n=154$)	1	7	3	88
Parous ($n=567$)	5	11	5	80
	$\chi^2 = 8.9$, df = 3, $P<0.001$			
Type of contraception				
None ($n=269$)	4	17	6	73
Oral contraceptive pill ($n=69$)	4	10	6	80
Coil ($n=27$)	11	15	0	74
Sheath ($n=98$)	8	8	3	81
Cap ($n=7$)	14	0	0	86
Sterilization ($n=91$)	3	9	8	80

n = total number of women.

Of the 721 women 159 (22%) were not sexually active. None of these women reported regular symptoms. However, of the 562 women who were sexually active 32 (23%) reported regular symptoms in one or both questionnaires. This difference was significant ($P<0.001$).

Premenopausal women reported significantly more symptoms than postmenopausal women (Table 1) while significantly fewer nullipara reported regular urinary symptoms than parous women (Table 1).

There was no significant difference in reported episodes of the urethral syndrome among women using different forms of contraception (Table 1). Women using the coil, sheath or cap were more likely to have persistent symptoms than those who were taking the oral contraceptive pill, were sterilized or were using no contraception. Those women who used no contraception or were fitted with a coil were least likely to be totally free of regular symptoms.

Only two of the 132 women who reported regular symptoms of frequency and dysuria during the study felt that recent sexual intercourse related to their symptoms.

From the practice consultation records it was found that more of the women who reported regular frequency and dysuria (17/132, 13%) had been treated for vaginal discharge than of the women who did not (43/589, 7%). However, this difference was not significant. Of the 60 women who received treatment for vaginal discharge, 29 had a proven vaginal infection. During the four years, 123 women had been treated for urinary tract infection (confirmed by analysis of a mid-stream urine sample in 60% of these cases). Of those women who reported regular urinary symptoms 50% had been treated for urinary tract infection compared with only 10% of those women who did not report regular symptoms ($P<0.001$).

Among the 132 women who reported regular urinary symptoms 17 (13%) reported a change in their marital circumstances (widowed, separated, married, new partner) during the four years. The rate of recorded change for all women registered with the practice was 4% per year which is similar.

Discussion

This study has shown that young women (25–54 years) suffer more from the frequency–dysuria syndrome than older women and that sexually active women suffer more than those who are not sexually active. The decrease in reported symptoms among women aged 55–74 years is probably due to decreasing sexual activity while the rising prevalence of urinary symptoms among women aged 75 years and over may be explained by postmenopausal atrophic changes. This symptom prevalence is echoed in the third national study of morbidity statistics from general practice,[2] which reports a high constant consultation rate for urinary symptoms by women aged 15–44 years and a lower rate for those aged 45–74 years; the rate rises sharply again in women aged 75 years and over. In general postmenopausal women suffer fewer urinary symptoms than those who are premenopausal. In a larger study it would be interesting to subdivide the postmenopausal women into groups according to the number of years since the menopause. It seems likely that the prevalence of symptoms would rise substantially as the number of years since the menopause increased.

This study also indicates that recurrent as well as acute[5] urethral syndrome is a self-limiting condition. It may be that it has a natural periodicity in younger women as its incidence seems unrelated to type of contraception, change in sexual partners and recent sexual intercourse. In order to assess these factors, further study is required on larger numbers of women.

Of the 721 women in this study 29 (4%) reported persistent, recurrent frequency and dysuria. This is similar to the annual incidence of 4.8% reported by Brooks for women over 15 years old.[20] However, the overall reported incidence of regular symptoms of dysuria and frequency in this study was 8% in the first two year period and 14% in the second which is considerably greater than that reported by Brooks or the annual figure of 1.5% found by O'Dowd and colleagues.[5] However, in the study by O'Dowd and colleagues all of the women had sought medical help for their symptoms. In this study 183 women consulted with urinary symptoms during the four year study period of whom 74 proved to have a confirmed urinary tract infection and 29 had vaginal infection with discharge. Thus 80 women had con-

sulted for frequency–dysuria syndrome giving an annual incidence of 2.8%.

The increased reporting of regular urinary symptoms in the second survey may reflect a natural variation in the prevalence, or it may reflect an alteration in the women's perception of their symptoms as a result of being studied (Hawthorne effect). The patients in this study reported repeated attacks of symptoms, whereas O'Dowd and colleagues reported no relapses during the following 12 months.[5] However, O'Dowd postulated that the women did not report further symptoms because they were frightened of further investigation, or that the knowledge gained enabled them to tolerate any future symptoms.

This study has shown that the frequency–dysuria syndrome is common, affecting between 8% and 14% of women; it is a persistent problem for 4% of women. It occurs more commonly in younger women and in those women who are sexually active but it does not appear to be associated with recent sexual intercourse.

General practitioners should be aware that although a history of regular frequency and dysuria points to a diagnosis of urethral syndrome, each individual case of these presenting symptoms must be assessed in order to exclude urinary tract infection.

References

1. Office of Health Economics. *Compendium of health statistics.* London: OHE, 1989.
2. Royal College of General Practitioners, Office of Population Censuses and Surveys and Department of Health and Social Security. *Morbidity statistics from general practice. Third national study, 1981–82.* London: HMSO, 1986.
3. Walker M, Heady JA, Shaper AG. The prevalence of dysuria in women in London. *J R Coll Gen Pract* 1983; **33:** 411-415.
4. Jolleys JV. The reported prevalence of urinary symptoms in women in one rural general practice. *Br J Gen Pract* 1990; **40:** 335-337.
5. O'Dowd T, Ribeiro CD, Munro J, *et al.* Urethral syndrome: a self limiting illness. *Br Med J* 1984; **288:** 1349-1352.
6. Maskell R, Pead L, Allen J. The puzzle of urethral syndrome: a possible answer? *Lancet* 1979; **1:** 1058-1059.
7. Wilkins EG, Payne SR, Pead PJ, *et al.* Interstitial cystitis and the urethral syndrome: a possible answer. *Br J Urol* 1989; **64:** 39-44.
8. Gray LA, Pingleton WB. Pathological lesions of the female urethra. *JAMA* 1956; **162:** 1361-1365.
9. Bergman A, Karram M, Bhatia NN. Urethral syndrome. A comparison of different treatment modalities. *J Reprod Med* 1989; **34:** 157-160.
10. Furner PM, Roccasalva L, Fallica L, Tempera G. Efficacy of miocamycin in the therapy of non specific genital infection (NSGI) non gonoccocal urethritis (NGU) and acute urethral syndrome (AUS). *Int J Clin Pharmacol Res* 1988; **8** 111-116.
11. Sand PK, Bowen LW, Ostergard DR, *et al.* Cryosurgery versus dilatation and massage for the treatment of recurrent urethral syndrome. *J Reprod Med* 1989; **34:** 499-504.
12. O'Dowd T, Smail JE, West RR. Clinical judgment in the diagnosis and management of frequency and dysuria in general practice. *Br Med J* 1984; **288:** 1347-1349.
13. Gallagher DJ, Montgomerie JZ, North JD. Acute infections of the urinary tract and the urethral syndrome in general practice. *Br Med J* 1965; **1:** 622-626.
14. Mond NC, Percival A, Williams JD, Brumfitt W. Presentation, diagnosis and treatment of urinary tract infection in general practice. *Lancet* 1965; **1:** 514-516.
15. Panja SK. Urethral syndrome in women attending a clinic for sexually transmitted diseases. *Br J Vener Dis* 1983; **59:** 179-181.
16. Stamm WE, Wagner KE, Amsel R, *et al.* Causes of the acute urethral syndrome in women. *N Engl J Med* 1980; **303:** 409-418.
17. Burnley P, Marson WS, Evans M, Forsey T. *Chlamydia trachomatis* and lower urinary tract symptoms among women in one general practice. *Br Med J* 1983; **286:** 1550-1552.
18. Brumfitt W, Miller JMH, Ludlam H, Gooding A. Lactobacilli do not cause frequency dysuria syndrome. *Lancet* 1981; **2:** 393-395.
19. Jolleys JV. The reported prevalence of urinary incontinence in women in a general practice. *Br Med J* 1988; **296:** 1300-1302.
20. Brooks D. A general practitioner's view of the laboratory examination of urine. In: Meers P (ed). *The bacteriological examination of urine: report on a workshop of needs and methods.* London: HMSO, 1978: 39-44.

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