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A Study of Urinary Disorders in Post-Menopausal Women in a Tertiary Institute in Western Maharashtra

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ABSTRACT

Objective: *To study the associated factors for the development of urinary problems in post-menopausal women and the appropriate investigations, management and regular follow up of such cases*

Methods: *A total 121 post-menopausal women with urinary symptoms attending the gynaecology OPD as well as in patients were enrolled in the study. These patients were studied and evaluated based on history, clinical examination, investigation and follow up. The data was then subjected to statistical analysis and conclusions were drawn.*

RESULTS: *Burning micturition was the most common urinary symptom in the present study, seen in 85.12% post-menopausal women followed by urinary frequency (59.50%), urinary incontinence (28.92%), urinary urgency (27.27%) and mass per vaginum (25.61%). Escherichia Coli was the most common organism found in 45 post-menopausal women on urine culture and sensitivity. Local estrogen therapy provided relief of symptoms more than those who did not receive any local estrogen therapy.*

Conclusion: *In modern era, a woman spends almost 1/3rd of her life is the in post-menopausal age group. Hence we need to concentrate on the various health aspects of menopause including urinary problems. As shown in this study, most of these problems can be treated medically, though few may require surgical treatment*

Keywords*: Menopause, Burning micturition, Incontinence, Estrogen therapy.*

INTRODUCTION

The word "menopause" literally means the "end of monthly cycles" from the Greek words *pausis* (cessation) and *men* from *mensis* meaning (month). Menopause is defined as the permanent cessation of menses for 1 year. With the advent of modern laboratory testing, menopause may now be more precisely defined as amenorrhea, with signs of hypo-estrogenaemia, and an elevated serum follicle-stimulating hormone(FSH) level of greater than 40IU/L.

Most Indian studies locate the median age of menopause as 48 years; while those from the west reveal the same to be about 51. Statistics released by the Union ministry of health and family welfare show that life expectancy in India has gone up by five years, from 63.9 years for females in 2001-2005 to 69.6 years in 2011-2015. Thus women can be expected to live one third of their lives in the post-menopausal state. It is therefore expected that management of the gynaecological problems of menopause will become an increasingly important aspect of routine gynaecological practice.

Urogenital atrophy and its consequences are also a part of the physiological aging at menopause. Vulval Itching, burning micturition, urinary incontinence and dryness of the vagina are the symptoms most frequently reported by women over 55 years as reasons for visiting a gynaecologist. 25-30% of women of these have frequent urinary tract infections.

The oestrogen deficiency in menopause leads to urogenital atrophy and thinning of the urogenital epithelium and the reduced immunological defence mechanism makes post- menopausal women more susceptible to urinary tract infections. Unfortunately very little is known about urogenital complaints in postmenopause in India as Indian women are reluctant to come forward with these complaints because of lack of information , fear and embarrassment, and instead chose to endure them considering it a part of the aging process. There has been increasing interest in this condition in recent years, partly as a result of growing willingness by postmenopausal women to discuss their urogenital health, and also because of closer focus on quality of life issues by doctors and patients alike. Hence there is a need for further study about various urinary tract disorders occurring due to menopause.

AIMS AND OBJECTIVES

The Aim of this study was to determine the prevalence of urinary symptoms in post- menopausal women attending the gynaecology OPD and in patients in the tertiary institute.The Objectives were to study the associated factors for the development of urinary problems in post-menopausal women, the appropriate investigations, management and regular follow up of such cases.

MATERIALS AND METHODS

The study of urinary disorders in post-menopausal women was conducted in a tertiary care

institute in Western Maharashtra from November 2013 to January 2015. This study was an observational study. A Total of 121 post-menopausal women with urinary symptoms attending the gynaecology OPD as well as in patients were enrolled in the study. Women with pre-existing urogenital diseases and malformations, women on hormone therapy and malignancies were excluded. These patients were studied and evaluated based on history, clinical examination, relevant investigations and follow up. Investigations such as hemogram, peripheral blood smear, urine routine and microscopy, urine culture and sensitivity, ultrasonography, pap smears, hormonal profile as deemed necessary were carried out. A written informed consent of the patients was taken before subjecting them to any surgical intervention required. The data was then subjected to statistical analysis and conclusions were drawn.

RESULTS AND DISCUSSION

A total 121 post-menopausal patients with urinary symptoms were enrolled for the present study. No patients were lost to follow up. Out of 121 women, 12 women had surgical menopause and the rest 109 had natural menopause. All patients were parous in the present study and all of them had vaginal deliveries.

Table 1: The median age of patients in present study was 56.19 years. Large number of patients were in the 51-55 years age group.

Table 1: **Age (years) wise distribution of patients**

Age in years	No of patients	Percentage
40-44	0	0
45-50	11	9.09%
51-55	46	38.01%
56-60	40	33.05%
61-65	19	15.70%
66-70	5	4.13%
Total	121	100%

Table 2: 33.05% had the first onset of an urinary symptom after 3-5 years of menopause followed by 22.31% who had the first onset of an urinary symptom after 6-8 years of menopause. In the study by H Rekers et al[1] on menopause and incontinence and symptoms of the genito-urinary tract, the first urinary symptoms were found around 5 years after menopause.

Table 2: Distribution of patients according to time since menopause and appearance of first urinary symptom

No of years since menopause	No of patients with first urinary symptom	Percentage
0 TO 2	16	13.22%
3 TO 5	40	33.05%
6 TO 8	27	22.31%
9 TO 11	27	22.31%
>12	11	9.09%
Total	121	100%

Table 3: Burning micturition was the most common urinary symptom in the present study, seen in 85.12% post-menopausal women. 59.50% women had urinary frequency, 28.92% women had urinary incontinence, 27.27% women had urinary urgency whereas 25.61% women had mass per vaginum. Nocturia and retention of urine was not seen in any of the women in the study. H Rekers et al[1] studied 858 postmenopausal women for the association of menopause and urinary incontinence and other symptoms of the genito-urinary tract. In his study, urinary incontinence was seen in 26.4% post-menopausal women. Urgency was seen in 14.9% post-menopausal women; frequency of more than six times per day was seen in 19.6% women; nocturia of >1/night was seen in 17.6% women. Of the genito urinary symptoms, urgency and nocturia were reported more often by the post-menopausal women. Ching- Hung Hsieh et al[2] studied 1511 post-menopausal women and found urinary incontinence in 29.8%. US based multicentre women's Health initiative (WHI)[7] found 34% post-menopausal women had mass per vaginum.

Table 3: Distribution of patients according to urinary symptoms

Symptoms	No of patients	Percentage
Urgency	33	27.27%
Frequency	72	59.50%
Burning micturition	103	85.12%
Incontinence	35	28.92%
Nocturia	0	0
Retention	0	0
Mass per vaginum	31	25.61%

Table 4: In present study 58.67% of post-menopausal women had pus cells on urine analysis, whereas 41.32% women did not have any pus cells in the urine. Kurt G Naber et al[4] studied 1,261 post-menopausal women with urinary tract infection, and in their study 55.4% women had pus cells on urine examination. In present study, Escherichia Coli was the most common organism found in 45 post-menopausal women on urine culture and sensitivity, followed by Klebsiella Pneumoniae (9 women), Proteus Mirabilis (4 women). All organisms were sensitive to Norfloxacin. Tetsuro Matsumoto et al[5] studied 501 post-menopausal women with urinary tract infection; they found E coli in 65% of urine cultures followed by Enterococcus faecalis (12%), Streptococcus agalactiae(5.5%) and Klebsiella pneumonia(1.6%) 93.3% of the organisms were sensitive to Fluroquinolones. Marielle Beerepoot et al[6] studied 252 postmenopausal women with urinary tract infections; E coli was seen as the most common organism on urine culture seen in 59.6% of post-menopausal women followed by Enterobacteracea 10.2%, Klebsiella 5.6%. The organisms were sensitive to Trimethoprim-Sulfamethaxazole.

Table 4: Distribution of patients according to results of urine analysis and culture sensitivity

Urine microscopy	**Pus cells present N=71 (**58.67%)		**Pus cells absent N=50 (**41.32%)
Culture sensitivity	**Org**	**No.of pts.**	
	E.coli	45	
	Kleb. Pneumoniae	9	
	Proteus mirabilis	4	
	No growth	13	

Table 5: All patients were parous in the present study and all of them had vaginal deliveries**.** 62.5% of post-menopausal women who had grade III cystocele had more than 3 vaginal deliveries. Hence more the number of vaginal deliveries, higher the incidence as well as the severity of the cystocele. Rechberger T et al[8] studied 717 post-menopausal women and also associated vaginal deliveries with the severity of the cystocele diagnosed. Grade III cystocele was seen in 15.8% women with more than 3 vaginal deliveries whereas only 7.6% of grade III had less than 2 vaginal deliveries. In present study, 65.71% of postmenopausal women who had urinary incontinence had a parity of more than 3. Hence urinary incontinence also increases with an increase in number of deliveries. Ching-Hung Hsieh et al[2] studied 1511 post-menopausal women for effects of the mode of delievery on urinary incontinence; 13.30% patients had 0-2 vaginal delieveries; 26% of patients had 3-4 vaginal delieveries and 60.68% patients had more than 5 vaginal delieveries.

Table 5: Comparison of number of vaginal deliveries with grade of cystocele and incontinence.

No. of vaginal deliveries	**Cystocele**				**Incontinence**
	Grade I	**Grade II**	**Grade III**	**Total**	
0-2	1 (33.3%)	5 (41.6%)	6 (37.5%)	12	12
>3	2 (66.6%)	7 (58.33%)	10 (62.5%)	19	23
Total	3 (100%)	12 (100%)	16 (100%)	31	35

Table 6: In present study; 45.71% post-menopausal women had mixed urinary incontinence; followed by urge incontinence (37.14%) and stress incontinence(17.14%). H Rekers et al[1] found mixed incontinence to be most common form of incontinence among postmenopausal women in their study, followed by stress and urge incontinence. C- Hsieh et al[2] also found mixed urinary incontinence to be the most common form of urinary incontinence.

Table 6: Distribution of patients according to type of urinary incontinence

Type of incontinence	No of patients	Percentage
Stress	6	17.14%
Urge	13	37.14%
Mixed	16	45.71%
Total	35	100%

Table 7: In present study, out of 121 post-menopausal women with urinary symptoms, 61 patients were given local estrogen therapy in form of a estrogen cream applied daily at night for minimum of 3 weeks and were followed up for relief of symptoms spontaneously. 91.66% of post-menopausal women had relief with local estrogen therapy. In patients who did not receive local estrogen therapy, 80.32% had relief of symptoms. Local estrogen therapy provided relief of symptoms in more patients than in those who did not receive any local estrogen therapy. North American menopause society stated that local estrogen therapy can improve urge incontinence in patients with vaginal atrophy; on the other hand, its efficacy against stress incontinence is debated.

Estrogens have direct proliferative effects on the urethral and vesical epithelium, further effects include a buildup of the vaginal epithelium and reconstitution of the vaginal flora, resulting in a lower frequency of colpitis. In small scale trials, vaginal estrogen significantly reduced the frequency of urinary tract infections.[9] On the other hand, oral HT has no protective effect of this kind. Vaginal estrogen is recommended for the treatment of recurrent urinary tract infections both by the North American Menopause Society[11] and in the German S3 guideline. The relative risk of UTI is reduced by 36% to 75% with the use of local estrogen therapy [10,11]

Table 7: Distribution of patients with urinary symptoms according to results of local estrogen application

Local estrogen	No of patients %	Relief of symptoms %	No relief of symptoms %
Received	60(49.58%)	55 (91.66%)	5(8.33%)
Not received	61(50.41%)	49 (80.32%)	12(19.67%)

Table 8: In the present study, 23.96% of post-menopausal were diabetic. 31.42% of diabetic women had urge urinary incontinence. Brown et al[3] found 23% postmenopausal women were diabetic in their study. Urge incontinence was seen more commonly in diabetic women.

Table 8: Distribution of patients with diabetes and its association with urinary symptoms

Status of diabetes	No. of patients	Urge incontinence	Stress incontinence	Mixed incontinence	Cystocele	UTI
Diabetic	29 (23.96%)	11(31.42%)	0	6(17.14%)	7(22.58%)	19 (25.33%)
non diabetic	92 (76.03%)	2(5.71%)	6 (17.14%)	10(28.57%)	22(70.96%)	56(74.66%)
Total	121(100%)	13(41.93%)	6(17.14%)	16(45.71%)	31(25.61%)	75(61.98%)

MANAGEMENT OF URINARY DISORDERS

Urinary tract infection was treated in present study by antibiotics, namely Fluroquinolones as all the isolated organisms were sensitive to it. A total of a 7 day course of Norfloxacin was given in a dosage of 400 mg twice a day orally. Plenty of oral fluids were advised. Women were asked to follow up after 7 days for repeat urine analysis and to assess the relief of symptoms. 90.2% women had relief from urinary symptoms pertaining to urinary tract infection whereas as 9.8% women had persistent urinary complaints. They were given a further 7 day antibiotic course. Local estrogen therapy was given to 61 postmenopausal women in the present study in the form of local estradiol cream 1 mg daily at night for a total of 3 weeks and were followed up. 91.66% women had relief of symtpoms with usage of the local estradiol cream. Stress urinary incontinence was seen in 6 out of 121 postmenopausal women in the present study. All these cases were surgically corrected by the Kelly's cystocele repair. All patients had a relief of symptoms post operatively. Urge incontinence was seen in 13 women, of which 9 were treated with antibiotics. 8 of these 9 women had relief from symptoms after the antibiotic course. An Extended course of antibiotic was given to only 1 woman with urge incontinence who did not have any relief of symptoms. Rest of the women with urge incontinence were given local estrogen therapy and a relief of symptoms was seen. Mixed urinary incontinence was seen in 16 postmenopausal women, 11 of which were treated surgically by Kelly's stitch with cystocele repair and all had relief of urinary symptoms post operatively.

CONCLUSION

This study was performed on 121 post-menopausal women with urinary problems. In the modern era a woman spends almost 1/3rd ofher life in the post-menopausal age group, we need to concentrate on various health aspects of menopause including urinary problems. Since urinary problems

are distressing, disturbing and sometimes, can have familial and social implications, women may isolate themselves completely, causing psychological issues. As is shown in this study, most of these problems can be treated medically, though few may require surgical treatment.

LIMITATION OF THIS STUDY

Since the number of patients in this study was small, it may pose a difficulty in drawing any definitve conclusion. Further studies on a large number of such women will definitely throw more light on this so called "natural '' phenomenon. This will also help in formulating certain guidelines with regards to the diagnosis and management of this natural phase of life.

CONFLICT OF INTEREST: All authors declare that they have no conflict of interest and there was no involvement of pharmaceutical or other company.

INFORMED CONSENT: Informed consent was obtained from all individual participants included in this study.

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