RESEARCH ARTICLE

A PREVALENCE STUDY OF LOWER URINARY TRACT SYMPTOMS (LUTS) IN MALES

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ABSTRACT

Background: Lower urinary tract symptoms (LUTS) are storage, voiding and post-micturition symptoms affecting the lower urinary tract. LUTS can significantly reduce men's quality of life and may point to serious pathology of the urogenital tract. LUTS are common and not necessarily a reason for suspecting prostatic hyperplasia (BPH).

Aims & Objective: This study is aimed to clarify the relationship between lower urinary tract symptoms (LUTS) and their association with various etiopathologies.

Materials and Methods: In this study total 600 men above the age of 40 years attending the surgical outpatient department in LG hospital, Maninagar, Ahmedabad (AMC MET Medical College) were suggested to detail history taking including IPSS questionnaire for evaluating LUTS. Abdominal examination, Rectal examination, Nervous system examination were done and Patient were investigated by Ultrasound scanning (Abdominal & Transrectal), Blood tests and urine tests. In selected cases, Prostate Specific Antigen (PSA), flow rate measurement, uroflowmetry and cystourethroscopy were done.

Results: Of the 600 men, 222 had specific diseases (37%) responsible for occurrence of LUTS (BPH 45%, stricture urethra 40%, Neurogenic 7.5%, Miscellaneous 7.5%). About 15% of total subjects (90/600) had BPH. Among 400 men who had some degree of LUTS no specific disease was found responsible for these symptoms. Nocturia remained important symptom of LUTS in Bladder outflow obstruction.

Conclusion: The study indicated that LUTS are not only because of BPH, but there are many other urological and non-urological factors in the etiology & pathogenesis of LUTS. Nocturia remains important symptom in IPSS. Patient with LUTS need well planned assessment of disease, clear cut understanding of the relevant pathophysiology and proper approach to diagnosis and treatment.

Key Words: Lower Urinary Tract Symptoms (LUTS); International Prostatic Symptom Score (IPSS); Benign Prostatic Hyperplasia (BPH); Bladder Outflow Obstruction (BOO)

Introduction

Nearly in 78% of elderly men lower urinary tract symptoms are common.[1-3] Prevalence increases with age. The prevalence of nocturia in older men is about 78%. Older men have a higher incidence of LUTS than older women.[4,5] The common LUTS are urinary frequency, urgency, hesitancy and weak stream and nocturia. Initially all obstructive and irritative symptoms observed in aging men was termed prostatism however recently presented usage of these manifestations are termed as LUTS.[6] The pathophysiology of LUTS is multifactorial. Traditionally lower urinary tract symptoms in men were attributed to B.O.O. secondary to BPH. However recent studies have failed to reveal any significant correlation of LUTS with bladder outlet obstruction.[7] Furthermore lower urinary tract symptoms can be from other disease entities and have been shown to be present in women as well. Thus the term LUTS has been derived for the use when symptoms are not necessarily specific to prostate. The severity of LUTS is best quantified by using American Urological Association (AUA) symptom index and International Prostate Symptom Score or IPSS.[8,9]

We have evaluated the etiology of LUTS in males aged more than 40 years and data obtained are analyzed.

Materials and Methods

Many patients during last 4 years who visited our General Surgery and Urology OPD in L.G. hospital, Maninagar. Total 600 men above age of 40 years having LUTS were selected for study and following symptoms were included:

Voiding associated symptoms include hesitancy (worsened if the bladder is full), poor flow (unimproved by straining), intermittent stream-stop and start dribbling, sensation of poor bladder emptying and episodes of near retention.

Urinary Bladder storage associated symptoms included: Frequency, nocturia (at least two act of micturition at night)[6], urgency, urge incontinence, and nocturnal enuresis.

Each person was subjected to an IPSS questionnaire administered by interviewer doctor for recording lower urinary tract symptoms. These men were subjected for

thorough physical examination including external genitalia, digital, rectal examination and neurological examination. Routine blood and urine examination for glucose, protein, renal function and infection were done. Ultrasonography was routinely done in each patient to measure prostate volume and pre and post void urine measurement. After screening, uroflowmetry, retrograde urethrography and cystometry were performed in selected patients. The criteria of selection was based on symptomatology i.e. Uroflowmetry for men with complaints of slow stream, while for men with poor peak flow rate, Retrograde Urethrography (RUG) was performed. Cystometry was done in men with poor peak flow rate in absence of enlarged prostate and a normal RUG to rule out neurological disease or stress urge incontinence and also in diabetic men with BPH. BPH was diagnosed based on symptomatology and a prostate size greater than 25 grams, PSA and histological investigation were also optional.

Results

The patients were distributed into groups by age of 10 year interval (table 1). Of 600 men, 222 (37%) had specific disease responsible for LUTS was identified remaining 63% i.e. 378 patients had symptoms of LUTS but no specific disease were identified.

As given in Table 2 out of total 600 men, 90 patients (90/600=15%) had prostatomegaly as a case of LUTS (prostate size >25gm with B.O.O). But considering 222 patient with specific disease, it is the most common 40.5% (90/222) condition of patient with LUTS. BPH was frequently observed in the age group of 60-69 years (36) followed by 70-79 years (30). Stricture urethra was responsible for causing LUTS in 80 patient (80/600=13.33% of the 36%of patient with LUTS) being more prevalent in the age group of 40-49, 50-59 and 60-69 years.

Neurogenic bladder was held responsible for 17 patients (17/222=7.6%), most commonly observed at age group of 60-69 and 70-79 years. The remaining men (25/222=15.76%) had Urolithiasis (15%), Urethritis (1.34%), Chronic cystitis (1.16%), Prostatic abscess (0.67%), Chronic bacterial prostatitis (0.67%), Interstitial cystitis (0.5%) in descending order.

The distribution of urinary symptoms in 222 patients with specific disease and patient with no disease is given in Table 3. Nocturia is the most common predominant symptom in the patients with LUTS (192/222=86.4%) in almost all age groups. In patients more than 80 years it was almost 100% (9/9). Nocturia (90%), weak stream (90.6%) and urgency (88.3%) contributed to significant percentage in age group of 50-59 years. Weak stream was observed mainly in 50-59 (90.6%) & 60-69 years85.4%) age group. Lastly intermittency, hesitancy & sense of incomplete emptying of bladder were also contributed to a certain extent in all age group.

378/600 (63%) of patient with symptoms of LUTS were also shown in table no 2, but here we could not arrive at any causative factors being responsible for their suffering. Nocturia (290/378=76.7%) was predominant factors for causing symptoms of LUTS in almost all age groups, However sense of incomplete emptying (0%), intermittency (1.1%) contributed very little to their suffering.

Table-1: Distribution of patients according to age

Age in Years	40-49	50-59	60-69	70-79	>80	Total
No. of Patients	196	167	141	80	16	600

Table-2: Age wise distribution of disease

Disease	Age distribution in years					
	40-49	50-59	60-69	70-79	>80	Total (%)
BPH	0	15	36	30	09	90 (15.0)
Stricture Urethra	40	20	14	06	00	80 (13.4)
Neurogenic bladder	00	03	08	06	00	17 (2.8)
Urolithiasis	05	02	02	00	00	9 (1.5)
Urethritis	05	01	02	00	00	8 (1.34)
Chronic cystitis	06	01	00	00	00	7 (1.2)
Prostatic Abscess	04	00	00	00	00	4 (0.7)
Chronic bacterial prostatitis	03	01	00	00	00	4 (0.7)
Interstitial cystitis	00	00	00	03	00	3 (0.5)
Total	63	43	62	45	09	222(37.0)
Nonspecific diseases	133 (34.0)	124 (32.5)	79 (22.9)	35 (8.2)	07 (1.4)	378 (63.0)

Table-3: Age wise distribution of LUTS symptoms

Symptoms	Age distribution in years N (%)					Overall	Non-specific Disease
	40-49	50-59	60-69	70-79	>80		
Nocturia	50 (79.0)	30 (90.0)	54 (87.0)	40 (88.0)	9 (100.0)	192 (86.4)	290 (76.0)
Frequency	16 (25.4)	10 (23.3)	31 (50.0)	12 (26.6)	3 (33.3)	72 (32.4)	15 (3.9)
Urgency	32 (50.7)	38 (88.3)	32 (51.6)	22 (48.8)	3 (33.3)	127 (57.2)	210 (5.6)
Hesitancy	16 (25.3)	4 (9.3)	18 (29.0)	7 (15.5)	29 (22.2)	47 (21.1)	8 (2.1)
Weak stream	38 (60.3)	39 (90.6)	53 (85.4)	28 (62.2)	7 (77.7)	165 (74.3)	40 (10.5)
Intermittency	17 (26.9)	14 (32.5)	30 (48.3)	18 (40.0)	00	79 (35.5)	4 (1.1)
Sense of incomplete emptying	15 (23.8)	9 (20.9)	22 (35.4)	17 (37.7)	3 (33.3)	66 (29.7)	00
Total	63	43	62	45	09	222	378

Discussion

The term LUTS was proposed by Paul Abrams.[10] The increase in the prevalence of LUTS with age advances is an accepted fact. The prevalence of LUTS was 14% in France, Scotland 18%. In U.K, Sweden and U.S.A the prevalence of at least one LUTS was 72.3% for men[11] and in India around 37%[6]. From data we can see that LUTS are not indicative of only BPH and vice-versa is also true. BPH is cause of LUTS in 40.5% (90/222) of patient having specific disease but it contributed to only 15% (90/600) of all patient who had symptoms of LUTS. Thus although BPH is the most prominent cause of LUTS it is not the only cause of LUTS. Still 60% of patient with LUTS had other than BPH as a cause.

BPH was observed mostly in age group of 60-69 followed by 70-79 years. In these groups nocturia, weak stream and urgency were also more marked. In this groups of patient characteristically all patient greater than 80 years age have marked symptoms of weak stream (77.7%) and Nocturia (100%).

Nocturia has been proposed as a more than two voids per night. It was the most predominant among LUTS ranging from 75% to 100% irrespective of presence or absence of disease. It had a very significant impact on IPPS if we eliminate it from IPSS. IPPS scores drastically shifts from moderate to mild in almost all age groups. It also presumed that in 63% of patient (378/600) where no disease was identified for LUTS if we take care of nocturia, unnecessary intervention & expense for our already poor people can be avoided. The impact of nocturia on IPSS needs careful consideration. Thus the pathophysiology of LUTS is multifactorial and complex.[7] There may be urological conditions such as BPH, stricture urethra, prostatitis, urolithiasis, cystitis etc. or non-urological conditions like idiopathic detrusor over activity, neuropathic bladder as a result of diabetes, strokes, Alzheimer's disease, Parkinsonism or degeneration of bladder smooth muscle giving rise to impaired voiding and detrusor instability.[12]

It is important for the surgeon to distinguish irritative from obstructive LUTS and this helps clinician to arrive at a proper differential diagnosis. Many patient with LUTS (63%) have no disease identified, this suggest its multifactorial and complex origin. It requires more methodical approach more perfect investigative tools, orderly approach to diagnosis and therapy.

Conclusion

Age related urinary disturbances do occur in both men as well as women probably owing to impairment of smooth muscle function and neurovesicle co-ordination not all symptoms of disturbed voiding in aging men should therefore be attributed to BPH causing BOO. The consequences of BPH may be asymptomatic, BOO or only urodynamic evidence of with or without LUTS. There is contribution of several urological and non-urological factors as etiopathogenesis of LUTS.[13]

The availability and increased use of treatment modalities have created a great need to diagnose accurately the etiology of LUTS in men. The patient with LUTS are assessed by means of IPSS which gives a semi objective measure to severity however some symptoms do not give an accurate picture of underlying pathophysiological problem and IPSS assessment should include an assessment of quality of life which is a reflection of the degree of "bother" caused by a patient's symptoms. Thus patients with LUTS need a well-planned assessment and understanding of the relative pathophysiology and an orderly approach to diagnosis and therapy.

References

1. National Institute of Health and Care Excellence. Lower urinary tract symptoms: The management of lower urinary tract symptoms in men. NICE Clinical Guideline. 2010.
2. Garraway WM, Collins GN, Lee RJ. High prevalence of benign prostatic hypertrophy in the community. Lancet 1991;338:469-72.
3. Nielsen KK, Nordling J, Hald T. Critical review of the diagnosis of prostatic obstruction. Neurourol Urodyn 1994;13:201-17.
4. Boyle P, Robertson C, Mazzetta C, Keech M, Hobbs FD, Fourcade R, et al. The prevalence of lower urinary tract symptoms in men and women in four centers. The UrEpik study BJU Int 2003;92:409-14.
5. Park HK1, Kim HG. Current Evaluation and Treatment of Nocturia. Korean J Urol 2013;54:492-8.
6. Rao CN, Singh MK, Shekhar T, Venugopal K, Prasad MR, Saleem KL, et al. Causes of lower urinary tract symptoms (LUTS) in adult Indian males. Indian J Urol 2004;20:95-100.
7. Neal DE, Kelly JD. The prostate and seminal vesicles. In: Russell RC, Williams NS, Bulstrode CJ, eds. Baily & Love's short practice of surgery:25th edition. London: Hodder Arnold; 2008. p. 1345-9.
8. Barry MJ, O'Leary MP. The development and clinical utility of symptom scores. Urol Clin N Am 1995;22:229–307.
9. Barry MJ, Fowler FJ Jr, O'Leary MP, Bruskewitz RC, Holtgrewe HL, Mebust WK, et al. The American Urological Association symptom index for benign prostatic hyperplasia. The Measurement Committee of the American Urological Association. J Urol. 1992 Nov;148(5):1549-57; discussion 1564.
10. Abrams P. New word for old lower urinary tract symptoms for prostatism. BJ med J 1994;308:929-30.
11. Coyne KS, Sexton CC, Thompson CL, Milsom I, Irwin D, Kopp ZS, et al. The prevalence of lower urinary tract symptoms (LUTS) in the USA, the UK and Sweden: results from the Epidemiology of

LUTS (EpiLUTS) study. BJU Int 2009;104:352-60.
12. Roehrborn CG. Benign Prostatic Hyperplasia: Etiology, Pathophysiology, Epidemiology, and Natural History. In: Walsh PC, Retik AB, Vaughan ED, Wein AJ,eds. Cambell-Walsh Urology. 10th edn. Philadelphia: WB Saunders; 2012.
13. Oelke M, Bachmann A, Descazeaud A, Emberton M, Gravas S, Michel MC, et al. Guidelines on the Management of Male Lower Urinary Tract Symptoms (LUTS), incl. Benign Prostatic Obstruction (BPO). European Association of Urology 2013. Available from: URL: http://www.uroweb.org/gls/pdf/13_Male_LUTS_LR.pdf

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