

Epidemiological Study of Lower Urinary Tract Symptoms in Indian Male Population

Dr. Sunil Kumar Vishwakarma¹, Dr. Achal Gupta², Dr. Rajesh Prajapati³

^{1,2,3}(Department of surgery, Gajra Raja Medical College, Gwalior, MP, India)

Abstract:

Introduction: Lower urinary tract symptoms (LUTS) are a collection of symptoms related to problems with the voiding, storage and post-micturition of urine. They generally arise as a result of abnormalities or inadequate functioning of the prostate, urethra, bladder or sphincters.

Methods: This is a prospective study which was conducted from 1st Sept. 2011 to 31st Aug 2012. Data was collected from patients attended surgical OPD & wards of J.A. Group of Hospitals, Gwalior (M.P.) during the above mentioned period. The numbers of patients in this study was 200. Only male patients (age 20 yrs or above) were taken into consideration. Data was collected from patients of lower urinary tract complaints by clinical history, clinical examination and relevant investigations.

Results: LUTS occurs in all age groups but its incidence increases with age and is more prevalent in older age group. Post-void symptoms were most prevalent and nocturia was the most common LUTS. In the present study most common cause of LUTS was found to be BEP followed by UTI & stricture urethra.

Conclusions: The study of LUTS is very important in view of its high prevalence in the community. It is a multifactorial entity, encountered daily and often mismanaged so more focused evaluation needed according to various influencing factors.

Keywords: LUTS, Prostatism, BEP, BPH, Storage symptoms, Voiding symptoms, Post-micturitions symptoms

I. Introduction

Lower urinary tract symptoms (LUTS) are a collection of symptoms related to problems with the voiding, storage and post-micturition of urine. They generally arise as a result of abnormalities or inadequate functioning of the prostate, urethra, bladder or sphincters.

In the past, lower urinary tract symptoms (LUTS) in elderly men were always assumed to be directly or indirectly related to benign prostatic hyperplasia (BPH), benign prostatic enlargement (BPE), or benign prostatic obstruction (BPO). However, it is sometimes difficult or even impossible to make a direct link between symptoms and BPH. The latest knowledge and developments suggest that not all bladder symptoms of elderly men are necessarily linked to the prostate (BPH-LUTS), but instead might be caused by the bladder (detrusor overactivity- Overactive Bladder Syndrome [OAB], detrusor underactivity) or kidney (nocturnal polyuria).[1]

The pathophysiology of LUTS is diverse. In men, benign prostate enlargement, which is secondary to benign prostatic hyperplasia and causes bladder outlet obstruction, is frequently considered to be the major cause of LUTS. However, many other conditions can cause LUTS, including detrusor muscle weakness or overactivity, prostatitis, urinary tract infection, malignancy and neurological disease.

LUTS are a major burden for the ageing male population. They have significant effects on quality of life in older men[2]. Approximately 30% of men aged 50 and older have moderate to severe LUTS. This is a very large group potentially requiring treatment. Although LUTS do not usually cause severe illness, they can considerably reduce patients' quality of life, and may point to serious pathology of the urogenital tract.

Historically terms such as 'prostatism', 'symptoms of benign prostatic hyperplasia', and 'clinical benign prostatic hyperplasia' have been used to describe lower urinary tract symptoms in men. However, because different symptoms require different approaches to treatment, and the prostate is only sometimes a causal factor in some of the symptoms, this terminology is inaccurate and can be unhelpful in guiding management [3].

Alternative terms have therefore been proposed. The National Institute for Health and Clinical Excellence (NICE) recommends that the term 'lower urinary tract symptoms (LUTS)' be used instead of the terms 'prostatism' or 'symptoms of benign prostatic hyperplasia' [4].

NICE does not recommend that the term LUTS be used in place of 'benign prostatic hyperplasia (BPH)' neither it is a synonym for 'symptoms of BPH'.

II. Material & Methods

This is a prospective study which was conducted from 1st Sept. 2011 to 31st Aug 2012. Data was collected from patients attended surgical OPD & wards of J.A. Group of Hospitals, Gwalior (M.P.) during the

above mentioned period. The numbers of patients in this study was 200. Only male patients (age 20 yrs or above) were taken into consideration.

Data was collected from patients of lower urinary tract complaints by clinical history, clinical examination and relevant investigations.

This included-

- Detailed history of the patient with special reference to urinary symptom, and grading according to International Prostate Symptom scoring system (I-PSS).
- Physical examination with special reference to examination of genito-urinary system and per rectal assessment of the size of enlarges prostate gland and associated abnormalities. In the present study enlarged prostate size was graded by digital rectal examination in to three grades:
 1. **Mild:** Examining finger reaches beyond enlarged prostate easily.
 2. **Moderate:** Examining finger reaches beyond enlarged prostate with difficulty.
 3. **Severe:** Examining finger could not reach beyond enlarged prostate.
- Systemic examination for associated illness.
- Focused neurological examination.
- Relevant Investigations-
 - **Blood-** Hb, TLC, DLC, ESR, Sugar, Urea, S. creatinine, S. PSA (if necessary i.e. if prostate glands is hugely enlarged or if prostate consistency found hard, grossly or focally)

Urine- Routine and microscopy, culture & sensitivity

USG Abdomen- to know the size of prostate, prostatic volume, and residual urine and upper urinary tract.

Uroflowmetry- To know the magnitude of obstruction. Normal flow rate is different for different age groups. Here we had taken 12 ml/sec Q_{max} as cut-off value. $Q_{max} < 12$ ml/sec was considered as decreased flow because most of the patient presented with LUTS were middle or old aged.

Cystoscopy- Direct visualisation of lower urinary tract for any obvious pathology.

All the data were collected by filling proforma and results tabulated and compared with previous studies.

III. Observations And Discussions

Tables:

Table No. 1 Showing Age Distribution Of Patients

Age Groups	No. Of Patients N=200	Percentage Of Patients
20-29	18	09
30-39	24	12
40-49	26	13
50-59	34	17
60-69	52	26
70-79	32	16
80-89	14	07

Table No. 2 Showing Distribution Of Lower Urinary Tract Symptoms

Symptoms	No. Of Patients , N=200	Percentage Of Patients
Storage Symptoms	180	90
Frequency	140	70
Nocturia	166	83
Urgency	34	17
Voiding Symptoms	188	94
Weak Stream	150	75
Hesitancy	94	47
Straining	142	71
Intermittent Stream	122	61
Postmicturition Symptoms	190	95
Feeling Of Incomplete Emptying	160	80
Post-Micturition Dribble	154	77

Table No. 3 Showing Age Distribution Of Various Conditions Presenting As Luts

Conditions Presenting As Luts	Age Groups (In Years)							Total (%)
	20-29	30-39	40-49	50-59	60-69	70-79	80-89	
Stricture Urethra	2	4	5	3	0	0	1	15
Bep	0	0	3	4	14	8	2	31
Oab	0	1	2	1	3	3	0	10
Prostatic Cancer	0	0	0	3	1	4	1	09
Urinary Bladder Cancer	0	0	0	1	2	1	3	07

Urinary Bladder Stone	3	0	0	0	4	0	0	07
Uti (Non-Specific)	3	4	3	3	0	0	0	13
Cystitis	1	3	0	2	2	0	0	08

Age distribution of LUTS:

LUTS occurs in all age groups but its incidence increases with age [5,6,7,8,9], and is more prevalent in older age group. In the present study prevalence increased as we go from lower age group to higher one up to 7th decade, after 70 years prevalence found to be decreased probably due to less no. of patients in this age group, which is in accordance with other studies [6,7,8,10,11]. In the present study 60-69 years age group had highest prevalence (26%) of LUTS, which is comparable to **BACH survey** [10] results as they found highest prevalence of LUTS (26.5%) in 7th decade (60-69 yrs), while **Michael A, et al** [7] found maximum prevalence (29.9%) in 50-59 yrs age group.

Distribution of symptoms of LUTS:

LUTS is divided in to three groups storage, voiding & post-micturition but these symptoms overlap to each other [7,8,9,12]. It means patient presenting with voiding symptoms may have storage and/or post-micturition symptoms.

In the present study post-void symptoms were most prevalent (95%) followed by voiding (94%) & storage symptoms (90%), which is supported by **ICS-BPH Study** [13] results as they had also found voiding symptoms (90-94%) are commoner than storage symptoms(66-71%) in men.**EpiLUTS Study** [9] and study done by **Michael A, et al** [7] also supported that voiding symptoms are more common than storage symptoms in men.

In the present study nocturia was the most common LUTS, which is in accordance with other studies done by **Erwin D E, et al** [8] and **Kuo H C** [14]. In this study nocturia was found in 83% of patients followed by feeling of incomplete voiding (80%), post-micturition dribbling (77%), straining (71%) & frequency (70%).

Conditions presenting as LUTS:

In the present study most common cause of LUTS was found to be BEP (31%), followed by UTI including cystitis (21%), stricture urethra (15%), and prostatic cancer (9%). UTI (including cystitis) and stricture urethra were more common in younger age group and incidence of BEP, Prostatic cancer and Urinary bladder cancer were more in older age group. Maximum incidence of BEP (45.6%) was found in 60-69 yrs, Prostatic cancer (44.4%) was found in 70-79 yrs and Urinary bladder cancer (42.8%) was found in 80-89 yrs. When the current study was compared with a study done by **C N Rao, et al**, results were found comparable [5].

	C N Rao et al	Present study
Max incidence of BPH	60-69 yrs (37.5%)	60-69 yrs (45.6%)
Max incidence of stricture urethra	40-49 yrs (40.6%)	40-49 yrs (33.3%)
M/C cause of LUTS	Stricture urethra (43%)	BPH (31%)
M/C LUTS	Nocturia (80.6%)	Nocturia (83%)

IV. Conclusions

LUTS occurs in all age groups but its incidence increases with age and is more prevalent in older age group. LUTS is divided in to three group storage, voiding & post-micturition but post-void symptoms were most prevalent (95%) followed by voiding (94%) & storage symptoms (90%). In the present study nocturia(83%) was the most common LUTS. In the present study most common cause of LUTS was found to be BEP (31%), followed by UTI (21%) & stricture urethra (15%).

The study of LUTS is very important in view of its high prevalence in the community. It is a multi-factorial entity, encountered daily and often mismanaged so more focused evaluation needed according to various influencing factors.

References

- [1]. Chapple CR, Roehrborn CG. A shifted paradigm for the further understanding, evaluation, and treatment of lower urinary tract symptoms in men: focus on the bladder. *EurUrol* 2006 Apr; 49(4):651-8
- [2]. Parsons JK, Bergstrom J, Silberstein J, Barrett Connor E. Prevalence and characteristics of lower urinary tract symptoms in men aged > or = 80 years. *Urology* 2008; 72: 318-321
- [3]. Abrams P. New words for old: Lower urinary tract symptoms for "Prostatism". *Br Med J* 1994; 308: 929-30.
- [4]. NICE (2010) The management of lower urinary tract symptoms in men (NICE guideline). National Institute for Health and Clinical Excellence.
- [5]. Rao CN, Singh MK, Shekhar T, Venugopal K, Prasad MR, Saleem KL, Satyanarayana U. Causes of lower urinary tract symptoms (LUTS) in adult Indian males. *Indian J Urol* 2004;20:95-100
- [6]. Milsom I, Irwin DE. A Cross-Sectional, Population-Based, Multinational Study of the Prevalence of Overactive Bladder and Lower Urinary Tract Symptoms: Results from the EPIC Study. *EurUrol* 2007 Jan;6(1);1-22

- [7]. Michael A. Joseph¹, Sioban D. Harlow², John T. Wei³, Aruna V. Sarma³, Rodney L. Dunn³, Jeremy M. G. Taylor⁴, Sherman A. James^{2,5}, Kathleen A. Cooney³, Kay M. Doerr^{2,3}, James E. Montie³, and David Schottenfeld², Risk Factors for Lower Urinary Tract Symptoms in a Population-based Sample of African-American Men. *Am J Epidemiol* 2003;157:906–914
- [8]. Irwin DE, Milsom I, Hunksaar S, et al. Population-based survey of urinary incontinence, overactive bladder, and other lower urinary tract symptoms in five countries: results of the EPIC study. *EurUrol* 2006; 50:1306 - 1315
- [9]. Coyne KS, Sexton CC, Thompson CL, 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.
- [10]. Kupelian V, Wei JT, O’Leary MP, et al. Prevalence of lower urinary tract symptoms and effect on quality of life in a racially and ethnically diverse random sample: the Boston Area Community health (BACH) survey. *Arch Intern Med* 2006;166:2381–7.
- [11]. Verhamme KMS, Dieleman JP, Bleumink GS, van der Lei J, Sturkenboom MCJM, Triumph Pan European Expert Panel. Incidence and Prevalence of Lower Urinary Tract Symptoms Suggestive of Benign Prostatic Hyperplasia in Primary Care—The Triumph Project. *EurUro* 2002 Oct;42(4):313-416
- [12]. Gravas S, Melekos MD. Male lower urinary tract symptoms: how do symptoms guide our choice of treatment? *urrOpin Urol.* 2009 Jan;19(1):49-54.
- [13]. Peters TJ, Donovan JL, Kay HE, et al. The International Continence Society “Benign Prostatic Hyperplasia” study: the bothersomeness of urinary symptoms. *J Urol* 1997;157:885–9.
- [14]. Kuo HC. Prevalence of lower urinary tract symptoms in male aborigines and non-aborigines in eastern Taiwan. *J Formos Med Assoc.* 2008 Sep;107(9):728-35.