



ORIGINAL RESEARCH PAPER

Surgery

CORRELATION OF UROFLOWMETRY AND AMERICAN UROLOGY ASSOCIATION SYMPTOM SCORE(AUASS) IN CASE OF LOWER URINARY TRACT SYMPTOMS

KEY WORDS:
LUTS,AUASS,Uroflowmetry

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ABSTRACT

INTRODUCTION- Lower urinary tract symptoms(LUTS) is a term used to describe a group of symptoms related to lower urinary tract. The most widely used assessment tool for severity of LUTS are International Prostate Symptom Score(IPSS) and American Urological Association Symptom Score(AUASS). Uroflowmetry in a LUTS patient is an essential tool to identify factors contributing to lower urinary tract dysfunction and to predict the outcome including undesirable side effects of a contemplated treatment.

AIMS & OBJECTIVES

- 1.To study the incidence of various symptoms of LUTS in men and their distribution among patient.
- 2.To study the severity assessment of individual cases with help of AUA scoring index.
- 3.To study and correlate the role of uroflowmetry in evaluation of these patients.

METHODOLOGY- Carried out in 154 cases in 1 year duration. Men having LUTS were selected and interviewed for AUA symptom score ,uroflowmetry and other relevant investigation were done to arrive at a final diagnosis and correlation with AUASS and uroflowmetry findings were calculated

RESULT-

- 1.Nocturia was the most common complain reported in 94.81% of patients followed by frequency (93.51%),sense of incomplete emptying (87.66%),weakstream (85.07%), straining(84.42%), urgency(78.58%) and interm itency(72.73%).
- 2.A.U.A symptom score showed high correlation with maximum flow rate($r=-.66$ and $p<.001$) and average correlation($r= -.32$ and $p<.001$) with average flow rate and low correlation with other parameters,the significance level was extreme with maximum and average flow rate and high with voiding time and flow time.

CONCLUSION- Among uroflowmetry findings Maximum flow rate and Average flow rate are highly correlated with LUTS severity.

INTRODUCTION-

Lower urinary tract symptoms (LUTS) is a term used to describe a group of symptoms related to bladder, prostate and urethra. LUTS are broadly divided into storage symptoms (frequency,nocturia,urgency) voiding symptoms (intermittency,straining,weak stream) and post voidal symptoms (sense of incomplete emptying,post voidal dribbling)¹. *Severity making and a more reasonable distribution of limited resources can be assessed through post voidal urine measurement, frequency- volume chart, International consultation in incontinence Questionnaire Short form(ICIQ-SF) but the most widely used assessment tool are International Prostate Symptom Score(IPSS) and American Urological Association Symptom Score(AUASS)*. Uroflowmetry is a non invasive urodynamic test that measures the volume of urine released, the speed with which it is released, and how long does the release takes place. Uroflowmetry in a LUTS patient is an essential tool to identify or rule out factors contributing to lower urinary tract dysfunction (e.g., urinary incontinence) and assess their relative importance and to predict the outcome including undesirable side effects of a contemplated treatment². Normal uroflow curve is bell shape any deviation from this could give a clue of disease. As percentage of elderly population in India is increasing and so is the prevalence of LUTS. Recent studies have now proved that not cases of LUTS are due to BPH, here uroflow studies play their role as many cases of LUTS have shown normal to average flow rate thus compelling a physician to re-evaluate the patient and predict the outcome of any surgical intervention.

AIMS AND OBJECTIVES-

1. To study the incidence of various symptoms of LUTS in men and their distribution among patients.
2. To study the severity assessment of individual cases with help of AUA scoring index.

3. To study and correlate the role of uroflowmetry in evaluation of these patients.

METHODOLOGY-

154 elderly male patients having LUTS were selected in duration between 1st June 2017 to 31st May 2018 and direct face to face interview of patient was done and AUASS was calculated. Proper general examination was done and after proper counselling about procedure, uroflowmetry was done when patient felt moderate urge for micturition in standing position with adequate privacy. Routine investigation and imaging modalities like Xray KUB, abdominal ultrasound were done to arrive at a definite diagnosis.

All these data were recorded meticulously in proforma and in master chart for further systematic tabulation for observations and analysis. The Pearson correlation coefficient was used to find out correlation. P-values <0.05 were regarded as statistically significant. Summary and conclusions were drawn after discussion with review of literature.

RESULTS-

Table 1

Sno	URINARY COMPLAINT	% OF PATIENTS	AVERAGE AUASS SCORE
1	Sense of incomplete emptying	87.66	2.07
2	Frequency of Micturition	93.51	2.50
3	Intermittency	72.73	1.67
4	Urgency	78.58	1.60
5	Weak stream	85.07	2.60
6	Straining	84.42	2.69
7	Nocturia	94.81	3.04

TABLE :2

Sno	UROFLOWM ETRY	CORRE LATION COEFFI CIENT	CORRELA TION LEVEL	P. VAL UE	SIGNIFIC ANCE LEVEL
1.	Voiding volume	-.15	Low	>.05	Not significant
2.	Maximum flow rate	-.66	High	<.001	Extreme significant
3.	Average flow rate	-.32	Average	<.001	Extreme significant
4.	Voiding time	.24	Low	.0026	High significant
5.	Flow time	.23	Low	.0029	High significant
6.	Time to maximum flow	.11	Low	.16	Not significant
7.	Hesitancy	.05	Low	.48	Not significant

DISCUSSION-

In the present study nocturia was the most common complain reported in 94.81% of patients followed by frequency (93.51%), sense of incomplete emptying (87.66%), weakstream(85.07%), straining(84.42%), urgency (78.58%) and intermittency (72.73%) .*Rao CN et al³³(2004)* in his study too reported nocturia as the most common complain (83%) followed by weak stream (75%) and urgency(60%).In study by *Vishwakarma SK et al²⁶ (2016)* nocturia was found in 83% of patients followed by feeling of incomplete voiding (80%), post-micturition dribbling (77%), straining (71%) & frequency (70%).*Masu S et al³⁰(2014)* in his study again found nocturia as the most common complain (86.4%) next were weak stream(74.3%) and urgency(57.2%).

Nocturia was the most common complain in each series,higher value of each complain was found in present series as the patients had to give graded response for each complain while in rest series the answer was in yes/no,this difference could influence the patients response in present series who were mostly illiterate. AUASS has very high level of correlation with maximum and average flow rate and low level of correlation with voiding time and flow time. There was no significant correlation with other parameters. Near similar findings were seen in other studies by, *Singla S et al⁴⁰(2014)* and *Oranusi CK et al⁴¹(2016)* except for *Thapa N et al⁴⁵(2017)*, where no correlation was seen with maximum and mean flow rate this might be attributed to difficult level of understanding of A.U.A symptom score by common people who are uneducated and needed assistance of researchers to fill the questionnaire. It can be concluded that among the parameters which were obtained by uroflowmetry, peak flow rate was the most representative of the symptom severity of the patient. Slight variation in other parameters in present study with other can be due to the fact that patient selection in present series were cases of LUTS while in rest series it was BPH associated LUTS.

CONCLUSION-

Amongst uroflowmetry findings only maximum flow rate and average flow rate has strong correlation with AUASS value while voiding time and flow time had weak correlation and hesitancy ,voiding volume and time to peak flow did not showed any correlation.

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