ORIGINAL RESEARCH PAPER

Volume-7 | Issue-8 | August-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

ROLE OF AUA SCORE IN EVALUATION OF PROSTATIC HYPERPLASIA

Anatomy

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ABSTRACT

Background: BPH is a common condition among elderly males. It has been reported in 50% of all males by the 6th decade and over 90 % males above 70 years. Most patients with BPH present with symptoms of difficulties of voiding. AUA BPH guidelines provide a rational and balanced approach for evaluation and management of patients with symptomatic BPH. ***Aim:*** *to assess the AUA score in some prostatic disorders and find out the correlation of the score with postvoidal residual urine.*

Materials and Methods**:** *this retrospective study comprises of 154 cases of which 60 cases without any urinary symptoms were taken as controls in contrast to 94 cases showing urinary symptoms. The subjects were given an AUA score index and the score was found out for each person and later the patients were screened through transurethral sonography to find out the prostatic weight and postvoidal urine volume.*

Result: *the AUA score has definite correlation with residual urine volume.*

Conclusion: *the aua score is most effective noninvasive procedure to evaluate the progress of BPH.*

KEYWORDS

Prostate, Obstructive Uropathy, Iritative Uropathy, Aua Score, Pvuv.

I.Introduction

BPH is a common condition among elderly males. It has been reported in 50% of all males by the 6th decade and over 90 % males above 70 years; Garaway,W(1994)[1], thus a common cause of morbidity among older men. The commonest age group of presentation for both carcinoma and BPH is seventh decade and obstructive urinary symptoms are its most common mode of presentation; Chandanwale S(2013)[2].

There is a strong suspicion that the prevalence of BPH is higher than has been reported in clinical retrospective and necroscopy studies. Most patients with BPH present with symptoms of difficulty in voiding. These symptoms are nonspecific and are identified by a variety of terms collectively called lower urinary tract symptoms [LUTSs]. Lepor H (2004)[3]

Although LUTS secondary to BPH (LUTS/BPH) are often not life-threatening conditions, they significantly affect the quality of life (QoL). Johnson TV(2012)[4]

This subjective dependency for the elaboration of symptoms in men with LUTS demanded a need for developing a system care that can be used and reproduced to evaluate symptoms and hence can help to guide management strategies. Barry MJ(1992)[5]

The first version of the International Prostate Symptom Score (IPSS) [Table-1) was created in 1992 by the American Urological Association (AUA) and consisted of seven questions. It originally lacked the 8th Question about (QoL); hence, its original name was AUA symptom index (AUA) or AUA-7. It has been adopted by the World Health Organization as the IPSS(International Prostate Symptom Score). Each question, evaluating a combination of urinary storage and voiding symptoms, allows the patient to choose 1 of 6 answers indicating increasing severity of the particular symptom. The answers are assigned points from 0 to 5. The total score ranges from 0 to 35 (asymptomatic to very symptomatic). Additional 8th Question on QoL was added later on.

However the analytical study carried out by Barry MJ(2017)6 suggests, the value of adding an eighth item on UI to the AUASI seems small at best, too small to consider changing a scale that is so widely used and interpreted in its current form.

The AUA symptom index is clinically sensible, reliable, valid and responsive. It is practical for use in practice and for inclusion in research protocols. Barry M J.(2017)[6].

In men with BOO, PVR results from increasing outlet resistance at the start and up to a PVR of 450 mL, where the bladder reaches its maximum compensation. At volumes of >450 mL, both the outlet resistance and bladder failure are working together, leading to detrusor decompensation. Mostafa M (2014)

The **purpose of this work** is to evaluate the importance of AUA score in some BPH in a sample population of the Southern Coastal Odisha, irrespective of age, socio-economic status.

II. Aim and objectives

I. To evaluate aua score in some prostatic disorders and
II. correlate the aua score with postvoiding residual urine.

III. Materials and Methods

The present study was carried out in the department of anatomy, MKCG Medical College, Berhampur. Total 154 cases were selected from population of Southern Coastal Odisha. 60 number of controls were selected in contrast to 47 cases of obstructive uropathy and 47 cases of irritative uropahty. Their height, weight, family size, diet, economic status, educational status, addiction and habituation, culture and associated diseases were thoroughly assessed and kept in document to study them as disease modifying factors.

The patients were categorised into two groups:

a. Patients with urinary symptoms: Those seeking medical advice for lower urinary symptoms.
b. Controls: Those seeking medical advice for other physical ailments.

Group 'a' were further divided into two groups:

i. Obstructive lower urinary symptoms: who came with urinary retention or with indwelling catheters.
ii. Irritative lower urinary symptoms who showed **pre-voiding symptoms** like precipitancy, unable to control urination, frequency, nocturia; **voiding symptoms** like hesitancy, poor stream, delayed bladder evacuation and strangury or **Post voiding symptoms** like dribbling, incomplete evacuation and intermittency.

Patients with temporary urinary infections were temporarily excluded till their recovery.

All the patients were requested to complete the IPSS comprising the 7 questions. The degree of severity of these symptoms was noted from 0 to 5. The maximum score in the IPSS was thus 35. Later they were subjected to transurethral sonogrphy to find out the amount of postvoidal urine volume and prostatic volume,

TABLE-I: aua symptom index

Question	Not at all	<1/5 time	<1/2 time	About½ time	>1/2 time	Almost always
1. During the last month or so, how often have you had a sensation of not emptying your bladder completely after you finished urinating?	0	1	2	3	4	5
2. During the last month or so, how often have you had to urinate again less than two hours after you finished urinating?	0	1	2	3	4	5
3. During the last month or so, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5
4. During the last month or so, how often have you found it difficult to postpone urination?	0	1	2	3	4	5
5. During the last month or so, how often have you had a weak urinary stream?	0	1	2	3	4	5
6. During the last month or so, how often have you had to strain to begin urination?	0	1	2	3	4	5
7. During the last month or so, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?	0	1	2	3	4	5
AUA symptom score=sum of questions1-7	0	1	2	3	4	5

The study was approved by the institutional ehical committee.

Statistics: All the calculations and data processings were done by discriminant analysis method and passed through LSD test.

IV. observation

Table II-A: AUA score of controls and patients

group	No.	Max.	Min.	Mean	sd	Se
control	60	2	0	0.13	--	--
Obstructive	47	32	7	23.58	6.53	1.0
irritative	47	30	0	15.4	8.16	1.19

Table II-B: LSD test for AUA score:

group	D	Sed	t	P
Control vs obs	23.58	1.13	20.81	<0.001
control vs irrt	15.40	1.10	13.95	<0.001
Obst vs irrt	8.18	1.20	6.83	<0.001

Table IIIA: weight distribution of prostate in gm.

group	Max.	Min.	Mean	Sd	se
Control	30	5.3	14.71	8.29	1.07
Obstructive	301	19.2	81.58	55.58	8.11
irritative	99.1	10.1	35.65	17.66	2.58

Table IIIB: LSD test for prostate weight

group	D	Sed	t	P	significance
CTRL vs OBS	66.87	6.30	10.61	<0.001	S
CTRL vs IRT	20.94	6.30	3.32	<0.001	S
OBS vs IRT	45.93	6.67	6.88	<0.001	S

Table IVA: PVUV in ml:

group	No.	Max.	Min.	Mean	Sd	Se
control	60	nil	nil	nil	--	--
Obstructive	47	427	30	175.73	108.64	18.91
irritative	47	180	1.6	55.21	41.73	7.38

Table IVB: LSD test for PVUV:

group	D	Sed	t	P
CTRL vs OBS	56.87	6.30	10.61	<0.001
CTRL vs IRT	20.94	6.30	3.32	<0.001
OBS vs IRT	39.93	5.67	7.18	<0.001

V. Discussion

Table IIA: The mean value of AUA score in obstructive group is 23.58±1, a bigger score over that of irritative group(15.40±1.19). The test was found to be significant during comparison by LSD test. These findings corroborate with the observations shown by Barry MJ (2017)[6] and Kalpan(1996)[7].

Barry MJ (2017)[6] et al studied a group of prostatic enlargement including both obstructive and irritative. The scores were highly correlated with subjects' global ratings of the magnitude of their urinary problem. The index was sensitive to change, as it decreased from a mean of 17.6 in preoperative stage to 7.1 by 4 weeks after prostatectomy (p <0.001).

A prospective therapeutic study on 145 BPH cases was carried out bt kalpan SA et al(1996)[7] for two years using AUA BPH score as guide. The study suggests that the AUA BPH guidelines provide a rational and balanced approach for evaluation and management of patients with symptomatic BPH.

But Ananymous(1993)[8] and Garraway (1993)[9] had different observations. The correlation between the symptom score, residual volume and urine flow rate were weak, Ananymous(1993)[8]. The irritative symptoms, strongly associated with change in quality of life were urgency, frequency and nocturia. The relationship between the obstructive symptoms and the quality of life scale is proved to be weak, Garraway(1993)[9].

In this study, 91.48 % do bother with some symptoms. persons have taken the symptom as an old age disorder rather than disorder of prostate and give least importance to it. This is marked while filling symptom score questionnaire. Many of them are unable to express it properly and needed assistance to fill the index. To overcome such difficulties van der walt et al (2011)[10] developed VPSS (visual prostate symptom score). This view was supported by study undertaken by Roy A(2016)[11].

Table IIIA and IIIB: the prostatic weight in controls (14.71±1.07)gm in comparision to that in symptomatic groups like obstructive(81.58 ±8.11)gm and irritative (35.65±2.58)gm. Weight in obstructive being the greatest. These values are comparable with Watanabe(1974)[12]. Berry and Berry et al (1984)[13] states that the normal prostate gland did not rise above 20 gm with increasing age of men without evidence of histological BPH.

From LSD test, with p value less than 0.001, there is a definite significance of the tests while comparing between the groups. Berry et al (1984)[13] are of opinion that presence of BPH with histological evidence was responsible in change of prostatic weight not the age.

According to Garraway(1991)[9], Correlation between urinary symptom score was not strong. High proportion of male with more than 20 gm prostate weight reported having either none or few urinary sign or symptoms. Even for prostate of more than 40gm , urinary symptoms were not reliable guide to the presence of BPH.

Table IVA and IVB: The urine volume remained in bladder after effective void (PVUV) is measured in ml by ultrasound. Persons coming with acute retention, with catheter are 14 in number=29.78% and rest 70.22% shows PVUV. In obstructive group the value ranges from min 30 ml to max 427ml with mean 175.73±18.91 ml with sd 108.64. whereas persons in irritative symptoms, have PVUV ranging from min 1.6ml to max 55.21 ml having also scatterd in PVUV sample with sd 41.73. PVUV of 31.91% is not known. The LSD test was found significant with p value less than 0.001. These findings coincide with the observations of KolmanC(2014)[14]. However observations by Mostafa M (2014)[15] do not agree with our findings.

In a regression analyses carried out by Christopher Kolman et al

(1999)[14] post-void residual did not appear to be associated with the AUA index, age or peak urinary flow rate. However, a somewhat stronger relationship was found between residual urine and prostate volume.

Mostafa M et al(2014)[15] studied a group of bladder outlet obstruction . the commonest cause of retention was bph. However few were having bladder neck dysfunction. The obstructive features were more common with PVR < 450 ml, whereas overflow incontinence and nocturnal wetting were more apparent with PVR> 450 ml.

VII. conclusion

The AUA score can be used clinically as one of the most effective tools to evaluate the progress of BPH with referrence to residual urine and prostatic weight. It is cost effective, patient compliant and also be used as a prognostic guide even in low socio- economic group.

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