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Case Report

TREATMENT OF BENIGN PROSTATIC HYPERPLASIA THROUGH AN INDIGENOUS COMPOUND- A CASE REPORT

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ABSTRACT

Benign prostatic hyperplasia (BPH) is a common problem seen in elder men. Though prostatectomy is the ultimate option of treatment, conservative management is preferred always. Indigenous medicines also have a role in symptomatic relief and improve the quality of life in such patients. Here, we presenting a case intervened with an indigenous compound showed a reduction in prostate size and International prostatic symptoms score.

Key words: Benign prostatic hyperplasia, Asthila, *Bryophyllum pinnatum*, *Crataevanurvala*.

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INTRODUCTION

Benign prostatic hyperplasia (BPH) is a common cause of lower urinary tract symptoms in aging men, worsening their quality of life. It is a histologic diagnosis of the proliferation of smooth muscle, epithelium, and stromal cells within the transition zone of the prostate [1]. Autopsy studies have shown that BPH increases in prevalence with age beginning at age 30 and reaching a peak prevalence of 88% in men in their 80s [2]. In India BHP found in 40% cases presenting with lower urinary tract symptoms (LUTS) in the age of 60-69 years [3]. The symptoms of BHP arise through two mechanisms static (hyperplastic prostatic tissue compresses the urethra) and dynamic (increased adrenergic nervous system and prostatic smooth muscle tone). Both mechanisms increase resistance to urinary flow at the level of the bladder outlet incomplete emptying, urinary hesitancy, intermittency [4]. Chronic bladder outlet obstruction leads to bladder decompensation and detrusor under activity, manifesting as (starting and stopping while voiding), a weakened urinary stream, and urinary retention. BPH is diagnosed through careful evaluation of LUTS, physical examination, digital rectal examination (DRE), urinalysis, IPSS survey (The International Prostate Symptom Score), Ultrasound and adjunctive tests like estimation of Prostate-specific antigen (PSA), Postvoid residual volume of urine (PVRU) and Uroflowmetry, A number of medical treatments are available to alleviate symptoms, delay disease progression, and lessen the chance of needing surgery for BPH in mild to moderate cases. Trans Urethral Resection of the prostate (TURP) or Prostatectomy is the standard line of therapy in patients, who do not respond to pharmacotherapy [5]. Malignant transformations have been found in 9.51% of patients with BPH and often these changes are predicted by the presence of markers such as a rise in the levels of prostate specific antigen (PSA) and acid phosphatise [6]. Recently α blocker and 5α-reductase inhibitors widely used to alleviate the symptoms of BPH with many adverse effects. Considering the above limitations and lack of

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definite pathophysiology of the disease herbal remedies have come into the forefront of research to treat various disorders of the prostate and male sexual disorders [7]. Due to, surgical therapies still represent the gold standard therapy for benign prostatic hyperplasia. Phytomedicines and traditional medicines are the first choices to treat male sexual disorders in many developing countries.

In Ayurveda, BHP has resemblance with Vatasthila, a type of Mutraghata (urinary retention). In this condition, aggravated Vatadosa (Apanavata) gets localized in between Basti (Urinary bladder) and Guda (Rectum and anus), produces a dense fixed firm glandular swelling called Vatashtila owing to Vinmutrasanga (obstruction of faces and urine) with Adhamana (Tympanitis) and ruja (pain)in Bastipradesha (suprapubic region) [8, 9]. Due to the similarity in sign and symptoms as well as anatomical consideration this condition bears a close resemblance with BHP. Management of Mutraghata given in Ayurvedic literature includes Abhyanga, NiruhaBasti, Sneha-pana, UttaraBasti, Seka, Pradeha, Virechanaetc [10]. Few case reports were published by scholars in past about the use of Matravasti and classical Ayurvedic formulations in BPH [11-13].

In this perspective, the effect of an herbal compound was analyzed to evaluate its safety and to ascertain its effect in reducing the obstructive symptoms of BPH and size of the prostate.

Trial drug

Whole plant parts of Parnabeej (Bryophy llumpinnatum Lam.) and stem bark of Varuna (CrataevanurvalaBuch. -Ham.) were procured from the local herb supplier of Kolkata and were authenticated by the Institute as per usual norms. Both the drug were cleaned, shed dried and cut into small pieces and kept in a separate vessel. A decoction of the above drugs was prepared separately as per the methods mentioned in Ayurvedic classics. The prepared decoction was filtered and dried under rotary vacuum driers for complete removal of moistures. Then, it was weighed and kept in a tightly closed glass vessel and found that a total amount of 2500 gram plant materials yield 1250 g of extraction from each. The sample of the prepared drug was sent for analytical study and quantification of marker compound quercitin (Table 1). The prepared drugs were encapsulated in equal ratio (250 mg each) in HG capsule shell to obtain 500 mg capsule.

CASE REPORT

Presenting concern

A 50-year-old man presented with complaints of intermittent pain in the suprapubic region, frequent micturition >20 times/ day and intermittent painful haematuria since 2 years. He also revealed other lower urinary tract symptoms (LUTS) urgency, terminal dribbling, dysuria, hesitancy, nocturia (> 4 urination in the night), and disturbed sleep. He had h/o retention of urine a year before. He had no h/o of Diabetes and Hypertension.

General examination and assessment as per Ayurvedic criteria

His personal history shown he was a farmer, omnivorous, married without any extramarital sexual affairs, Sleep pattern- poor and disturbed, bowel- irregular, not addicted to any smoking and alcohol, General condition-fair, emotional state-anxious, presence of mild dehydration, afebrile, pulse- 96/ minute, regular, Blood pressure- 140/90 mm Hg. height - 165 cm, weight - 64 kg

Urine (Mutra) – Swalpa-Baddha- vedanayukta, stool (Mala) - hard (Badhha), Jivha – suska, ruksha, sound (Shabda): Usual, Sparsa (Touch): Tender on painful areas, eye (Netra) - usual, stature (Akriti): Normal, skin (Tvak) - ruksha, nail (Nakha) - no abnormality seen. Prakriti: Sharirik - Vatapaittik, Manshik - Rajashik, homologous (Satmya) - Madhyama, compactness (Samhanana) - Madhyama, digestion (Aharashakti) - Madhyama, exercise (Vyayama Shakti) - Avara, age (Vaya) - Madhyama, locality (Desha) - Anupa, period (Kala) - Chirakari, bowel (koshtha) - Krura

Systemic examination of CVS/ Nervous/ Respiratory system didn't reveal any abnormality P/A (Per abdomen) -Bladder distended, Kidney-Not palpable, Ext. urethral meatus-normal, Penis-normal, No urethral discharge, Testes-Present, and with a soft consistency.

Laboratory Investigation

The baseline investigation data includes mild leucocytosis, anaemia, normal liver and kidney function, normal plasma and urine electrolytes, normal urinalysis, and with a normal Prostate specific antigen (PSA). (Table 2).

Diagnosis and Case conception and Assessment criteria

Based upon the presenting complaints, DRE, urinalysis, and Ultrasound report the case was diagnosed as BHP (Grade-II). The subjective parameters were chosen from International Prostate Symptoms Score (IPSS) and objective parameters (e.g., size of the gland, residual urine volume, etc.) for assessment.

Treatment Plan and follow-up

The drug (Capsule made from Parnabeej and Varuna aq. ext.) was administered at the dose of 2 capsules twice daily in empty stomach for a duration of 4 weeks. The patient was assessed on every two weeks to evaluate the IPSS score and after 4 weeks he was investigated for DRE, Urinalysis, and Ultrasound.

IPSS system: (Not at all- 0, less than 1 in 5 times- 1, less than half the time- 2, About half the time- 3, More than half the time- 4, Almost always- 5)

Table 1. Analysis report of the trial drug

Organoleptic characters of prepared drug material	Description: Fine powder, Colour: Dark brown, Odour: No characteristic odour, Taste: Bitter
Physiochemical parameters of the drug	Loss on drying: 12.5%,: Ash content: 27.5% Acid insoluble ash: 2.3%,Water soluble extractive: 60.3% , Alcohol soluble extractive: 35.6%, pH: 8
Quercitin level	Limits of detection (LOD) and quantification (LOQ) were 1.82% (w/w) and3.2 % (w/w) for Crataeva nurvala and Bryophyllum pinnatum respectively.

Table 2. Laboratory investigation baseline data

Blood:	TLC-11000/cumm,DLC-N-40%M-0%,L-50%,E-10%,B-0%, Hb-11g%
Liver function test	Total bilirubin-0.6 mg/dl, Direct bilirubin-0.2 mg/dl, SGPT-32 IU/L, SGOT-40 IU/L, Alkaline phosphatase-217 IU/L, Serum Albumin- 3.64 g/dl
Renal function test and electrolytes	Serum Creatinine-0.9mg/dl, Blood urea-26.4mg/dl. Plasma electrolytes-Na-134mmol/l, K- 4.2mmol/l, Cl-9.7mg/dl,Phosphate-3.9 mg/dl. Urine electrolytes-Na-112 mmol/l,K-29.8 mmol/l,Cl-145 mmol/l,Cal-3.8 mg/dl,Phos-7.2 mg/dl
Urinalysis	Urobilinogen-0.2 mg/dl, bilirubin -nil, Ketone-nil, Glucose-nil,pH-8.5,Sp.gr-1.005, puscell-3-7 hpf/cumm
Prostate specific Antigen	1.2 ng/ml

Table 3. Evaluation of IPSS score, DRE, and Ultrasound

Assessment particulars	Base line (Day 0) (25/10/2012)	30th day (22/11/2012)	51st day (14/12/2012)
IPSS			
Incomplete Emptying	3	2	1
Frequency	4	3	1
Intermittency	2	2	1
Urgency	2	1	0
Weak Stream	1	1	0
Straining	1	1	0
Nocturia	2	1	0
Quality of Life Due to Urinary Symptoms	2	1	1
Direct Rectal examination (DRE)	Sphincter tone-normal, Prostate-enlarged, upper limit not approachable, Surface-Smooth, Consistency-firm, mild tender, rectal mucosa-free.		Sphincter tone-normal, Prostate- Not palpable, rectal mucosa-free.
Ultrasound	The Ultrasound of the whole abdomen revealed Benign Prostatic Hypertrophy grade-II (weight-70 g) with Cystitis, PCS dilated (prominently on Lt Kidney) with mixed hydronephrosis		Both Kidney were normal, Prostate is normal & weight-21.9 g

DISCUSSION

The disease Vatasthila is mentioned under one of the subtypes of Mutraghata. Though the location and character of the disease are discussed in Ayurveda classics, details clinical manifestations are not stated. However, with the emergence of modern knowledge and techniques, many parameters are now used to evaluate the condition. In spite of tremendous advancement in modern medicine, many options including the herbal remedies for BHP reported various Ayurvedic single herbs are reported to be useful in this condition i.e.Tribulus Terrestris,Crataeva religiosa, Boerhaavia diffusa, Vetiveria zizanioides, Santalum album, Acacia catechu, Asparagus racemosus, Sphaeranthus hirtus, Orchis mascula, Caesalpinia bonducella, Shilajit (Asphaltum), Yava-kshaara (alkaline salts obtained from Hordeum vulgare), Yashada bhasma(Calcined zinc carbonate) etc. Among compound Ayurvedic formulations Chandraprabha Vati, Kanchanar Guggulu and VarunadiVati are used to treat the ailment [14]. The single herbs are used as mono therapy or in combination to treat BHP. In the present case in discussion, the standardized trial drug (Table 1) was chosen on the basis of pharmacological activities.

Parnabeej (Bryophyllum pinnatum Lam.) &Varuna (Crataeva nurvala Buch.-Ham.)are used to treat various urinary tract disorders like Ashmari (urolithiasis), Mutrakrichra (dysuria) by the traditional health practitioners of north eastern part of India since long. Bryophyllum pinnatum exhibits anti-nociceptive, analgesic, anti-inflammatory, antiulcer, neuro-sedative, muscle relaxant, diuretic, litholytic, and hypoglycemic properties. It also shows antimicrobial activity in vitro against Escherichia coli, Pseudomonas aeruginosa and Klebisella pneumonia and a gram-positive Staphylococcus aureus. Varuna (Crataeva nurvala Buch.-Ham.)has diuretic, litholytic and antimicrobial. Experimental model proves its uorlitholytic effect against 0.75% of ethylene glycol and remarkably diminished the crystal deposition in the Kidney [15]. From the presenting complaints and ancillary findings, the case diagnosed as Asthila (Table 1), which is assumed as a Kapha (due to Kathinatva, sthirat vaproperties) and Vata (due to pain frequency of urination and growth of the lesion) dominant disease. Varuna has Kaphahara property and good for any growth and internal abscess/inflammation due to its lupeol content. Parnabeeja has diuretic, antimicrobial property due to its saponin contents. There is a marked reduction in prostate size and improvement in IPSS seen. (Table 3)

CONCLUSION

BHP is a disease related to theaging process. Though surgery is the ultimate option of treatment, use of indigenous drugs may help to improve the quality of life as well as to reduce the symptoms. This treatment will help to endorse a step towards the use of the Ayurvedic drug in the management of BHP. However, a number of case studies are required.

STATEMENT OF HUMAN AND ANIMAL RIGHTS:

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

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CONFLICT OF INTEREST

No interest

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