Available online on 15.05.2025 at http://jddtonline.info

Journal of Drug Delivery and Therapeutics

Open Access to Pharmaceutical and Medical Research

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Review Article

Scientific augmentation of BPH and its treatment in Unani medicine the review

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Article Info:

Article History:

Received 09 Feb 2025
Reviewed 01 April 2025
Accepted 02 May 2025
Published 15 May 2025

Cite this article as:

Mallah RR, Ansari MS, Scientific augmentation of BPH and its treatment in Unani medicine the review, Journal of Drug Delivery and Therapeutics. 2025; 15(5):214-218
DOI:
http://dx.doi.org/10.22270/jddt.v15i5.7125

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Abstract

Background: Benign Prostatic Hyperplasia (BPH), or enlargement of the prostate gland, is a prevalent condition among aging males, especially those over 50. It presents with lower urinary tract symptoms (LUTS) that impact the quality of life. In Unani medicine, BPH correlates with conditions such as Izam Gudda-e-Mazi and is interpreted through the lens of humoral imbalance, particularly thick phlegm (Balgham Ghaliz) obstructing urinary pathways. Modern and Unani systems both recognize the progressive nature of BPH and its potential complications, such as acute urinary retention and infections. **Methods**: This review integrates modern scientific findings on the pathophysiology, epidemiology, and treatment of BPH with Unani perspectives. It draws on current biomedical data—highlighting hormonal factors (like DHT and estrogen), metabolic syndrome, and inflammation—and compares them to Unani etiologies rooted in humoral imbalance and organ inflammation. Management strategies from both systems are explored, including allopathic pharmacotherapy (e.g., alpha-blockers, 5α-reductase inhibitors), and Unani therapies such as Ilaj-Bil-Dawa (herbal remedies), Ilaj-Bil-Tadbeer (regimental therapy), and Ilaj-Bil-Ghiza (dietary measures). **Results**: Modern medicine provides pharmacological and surgical solutions for BPH, albeit with potential side effects such as erectile dysfunction and reduced libido. Meanwhile, Unani treatment emphasizes natural, multi-herbal preparations that possess anti-inflammatory, diuretic, and 5α-reductase inhibitory properties. Herbal combinations—such as those including Nepeta ruderalis, Zingiber officinale, and Foeniculum vulgare—are traditionally used to alleviate symptoms like dysuria and urinary retention. Complementary medicine's rising global popularity reflects a growing preference for safer, natural alternatives. **Conclusion**: The convergence of Unani and modern perspectives on BPH enhances our holistic understanding of the condition and expands the therapeutic options. Herbal formulations grounded in Unani medicine offer promising, less invasive alternatives with minimal side effects. Continued scientific validation of traditional remedies could significantly benefit BPH management by reducing reliance on surgical and synthetic pharmaceutical interventions.

Keywords: Prostate gland, Prostate enlargement, LUTS, BPH, Unani, Greco-Arab medicine

Introduction

Enlargement of the prostate gland, generally referred to as benign prostatic hyperplasia (BPH), is the most prevalent condition affecting older men, particularly those over 50.BPH can also be referred to as benign prostatic hypertrophy, senile prostate enlargement, adenoma, adenomyoma, and nodular hyperplasia of the prostate gland.[1] Additionally, there is histologically increased growth of both stromal and epithelial cells, starting in the prostate gland's periurethral region. Although it is not fatal, lower urinary tract symptoms (LUTS) are one of its clinical manifestations, and they affect the patient's quality of life (QOL).[2] Lower urinary tract symptoms (LUTS), which include urgency, nocturia, frequency, dysuria, difficulty emptying the bladder, difficulty initiating micturition, and weak or interrupted stream during micturition, are strongly associated with the presence of BPH in older men. While some LUTS is classified as "LUTS independent of BPH," many men develop chronic LUTS as a result of BPH and its aftereffects. Erectile dysfunction (ED) has also been connected to BPH with LUTS.[3] Around 50 percent of men develop BPH-related symptoms by the time they are 50 years old, despite the fact that BPH is rare before that age. The prevalence of BPH rises by 10% every ten years, reaching 80% by the time a person is about 80 years old. An estimated 75% of men over 50 years develop BPH symptoms, and 20 to 30 percent of men over 80 need surgery to treat their condition.[4] Age-related increases in prostate size are another significant aspect of the LUTS and BPH constellation. Since the first autopsy investigation by Berry and colleagues, this phenomenon has been examined in cross-sectional and longitudinal studies in a variety of ethnic groups. Many more studies have been conducted since then, most of which measure the prostate in men in different decades of life using transrectal ultrasonography. These studies show that prostate size grows from 25 to 30 g for men in their 40s to 30 to 40 g for men in their 50s and to 35 to 45 g for

men in their 60s across a broad range of racial and ethnic groupings. The prostate's transition zone, which is relatively small in men in their 40s at around 15 g, grows to about 25 g in men in their 60s and 70s at the same time. The source of the prostate's size increase is known to be the immediate periurethral glans, also known as the transition zone, which gradually enlarges and compresses the prostate's periphery zone.[5]

Background

In Unani medicine BPH has translated as Izam Gudda-e-Mazi.[6] Prostatomegaly can be related to Warm-e-Ghudda-e Mazi, Sala`a Ghudda-e-Mazi, Izam-i-Ghudda-i Mazi Sada, and Warm-e-Unq-e-Masanah. This condition is similar to the clinical features—narrow stream, urgency, incontinence, etc.—discussed in the classical literature of USM under Usr-ul-Bawl (Dysuria), Ihtibas-ul-Bawl (Retention of Urine), and Taqtir-ul-Bawl (Dribbling of Urine). According to the Unani physians obstruction to the urine flow can result from compression of the urethra caused by Warm-i Aza-i-Mujawira (inflammation/swelling of adjacent organs).[2] Unani system of medicine is based on the humoral theory given by Hippocrates, father of medicine, which states that any imbalance in the balance of the four humors, or Akhlat—blood, bile, phlegm, and black bile—causes illness, and so is in the BPH. According to this system of medicine, BPH is classified under the terms insidād majrā-i-mathāna (obstruction of the bladder outlet) and waram-i-unuq al-mathāna (swelling at the neck of the bladder).[7]

Epidemiology

The prevalence of BPH increases significantly as people age. Histological prevalence in the fourth, sixth, and ninth decades of life has been shown to be 8%, 50%, and 80%, respectively, in autopsy studies. The beginning and progression of clinical BPH have also been shown to be associated with older age, according to observational studies conducted in Europe, the US, and Asia. [2] The average prostate weighs 20 grams, which is attained between the ages of 18 and 20. [8] Additionally, a rise in modifiable metabolic risk factors, like obesity, is contributing to an increase in the prevalence of BPH. A higher likelihood of BPH and a more severe case of LUTS in men with BPH have been associated with male obesity. [3]

Etiopathology

Genetics and Hereditary

The significance of genetics and hereditary variables in BPH has been studied, as they influence many different disease processes. Monozygotic twins have a higher relative risk of 3.3 of illness concordance than dizygotic twins, and siblings with an early onset of BPH disease have a higher incidence risk, indicating a genetic component to the development of BPH.[8]

"DHT hypothesis." According to this theory, the development of BPH depends on functional testes, and with aging their prostatic androgen metabolism changes in a way that favors the buildup of dihydrotestosterone (DHT) in the prostate. Age-related increases in prostatic DHT have been suggested as the primary cause of the aberrant hyperplastic growth of BPH since DHT is thought to be the primary intracellular androgen promoting prostatic growth and formation.[9]

Metabolic Syndrome: The Recent research has also examined the relation between BPH and metabolic syndrome. It was first emerged by Hammarsten et al. that low levels of HDL-C, obesity, hypertension, and non-insulin-dependent diabetic mellitus (NIDDM) are risk factors for the development of BPH. The development and progression of BPH/LUTS are significantly influenced by a number of age-related metabolic abnormalities, including metabolic syndrome, obesity, dyslipidaemia, and diabetes, according to the findings of numerous pre-clinical and clinical investigations. Low-grade inflammation and sex steroid changes are two comorbidities that have been linked to metabolic syndrome and the onset and progression of BPH/LUTS.[4,10]

Estrogen: Although the prostate is often considered an androgen-target tissue, it is also an important target for estrogen. The prostate contains a higher concentration of estradiol, a more potent form of estrogen, than plasma. In castrated rats, Walsh, Wilson, and Klerk administered DHT and estradiol, causing the prostate to grow. This demonstrated the synergistic action of androgen and estrogen on prostatic hyperplasia.[1]

Pathophysiology

The fetal testis produces androgenic hormone by around the 12th week, and the general shape of the prostate gland is set by the 10th week of development. From the time of birth until puberty, the prostate gland grows larger. When a man is between 21 and 30 years old, his prostate weight normally reaches 20 (±6) g. As he ages, his weight grows, but unless BPH occurs, it stays constant.[11] Testicular androgens are necessary for the development of BPH throughout prostate development, puberty, and aging, even though androgens do not cause BPH. Bioavailable prostatic testosterone levels decrease with age, according to research on intraprostatic sex-steroid hormone levels. For terminal differentiation and secretory activities, luminal secretory cells need androgens, specifically dihydrotestosterone (DHT), an intracellular metabolite of testosterone. The prostatic 5-a reductase, which is found in basal epithelial cells and stromal fibroblasts, is primarily responsible for producing DHT. " In two intriguing studies, Roberts et al. found that BPH had more DHT activity than normal prostate gland tissue, which suggests that DHT is a permissive rather than a transformational mediator in the development of BPH.[10] The precise pathophysiology has not yet been determined, though. Numerous factors, such as sex hormones, neurotransmitters, inflammation, nutrition, microbes, and cellular impacts on both stromal and epithelial tissue, have been connected to the pathogenesis of BPH. However, even when androgen levels decline, prostatic hyperplasia is permitted to persist with the aid of estrogen. Even when androgen levels are declining, estrogen signaling causes the prostatic gland's androgen receptors to grow, which amplifies signals and stimulates hyperplasia.[12] It is

believed that the growth factor-led hyperplasia and gland remodeling observed in BPH are linked to an inflammatory process. The reduction by Dutasteride of Prostate Cancer Events (REDUCE) experiment, which included over 8,000 men with BPH/LUTS, provided the suggestion for this relationship. When this group first entered the experiment, 77.6% of their prostate biopsies showed chronic inflammation. [8]

Signs and Symptoms

Lower urinary tract symptoms (LUTS), which are divided into storage and voiding symptoms that happen after urinating, are most frequently caused by BPH. Frequent urination, waking up in the middle of the night to urinate, urgency (an uncontrollable urge to void), involuntary urination, especially nighttime involuntary urination, and urge incontinence (a urine leak that occurs after a strong, sudden need to urinate) are examples of storage symptoms. Symptoms of voiding include straining to void, feeling as though the bladder is not completely emptying, intermittency (not continuous), urinary hesitancy (a delay between trying to urinate and the flow actually starting), weak urinary stream, uncontrollable leaking after urination, and involuntary interruption of voiding. Symptoms like dysuria, or pain during urination, may accompany these symptoms.[6] Prostatic enlargement in BPH is the most common cause of voiding LUTS, while other medical conditions such diabetes, neurological disorders, or UTIs can also induce LUTS. UTIs and episodes of acute urine retention (AUR) are the two main dangers that individuals with LUTS face. The incidence of cardiovascular disease rises with age, in addition to the incidence of BPH.[10] In the Unani system of medicine, it is a disorder that is similar to the clinical features covered in the traditional literature of USM, such as Ihtibas-i-Bawl (retention of urine), Taqtir i-Bawl (dribbling of urine), and Usr-i-Bawl (dysuria), narrow stream, urgency, incontinence etc. According to Unani physicians, the urethra may get compressed due to Warm-i-Aza-i-Mujawira (inflammation/swelling of nearby organs), which would hinder urine flow. These disorders may be associated to Benign Prostatic Hyperplasia (BPH), a condition in which the prostatic urethra is compressed by an enlarged prostate, resulting in symptoms like post-void leaks, reduced stream, hesitation, and incomplete emptying.[13] The primary cause of swelling and inflammation (Auram) of any Azw Ghudadi (Gland) in the body has been identified as the aberrant accumulation of Balgham Ghaliz or Mawad-e-Ghaliz (thick phlegm). For generations, Unani doctors have used safe herbal medicines to treat the symptoms of BPH.[2] BPH may be the cause of bladder outlet obstruction (BOO). Abdominal pain, a persistent sense of a full bladder, frequent urination, acute urinary retention (inability to urinate), pain during urination (dysuria), difficulty initiating urination (urinary hesitancy), reduced urine flow, intermittent urination (starting and stopping), and nocturia are among the symptoms. Particularly if treatment is not received, BPH can worsen over time. Remaining urine or urinary stasis after incomplete voiding can raise the risk of urinary tract infections.[6]

Diagnosis and Evaluation

Prior to 1980, the only methods used to assess patients with BPH or LUTS were a medical history and physical examination, which included a urinalysis and digital rectal examination (DRE). To rule out any urinary tract damage or concomitant diagnosis, certain blood tests and radiography were employed. Significant advancements in detection and treatment took place after 1980. Among these innovations were urodynamic measurements, computed tomography, and ultrasound (USG). The prostate gland's size and post-void residual urine (PVRU) could be precisely measured by USG. Serum prostate-specific antigen (PSA) measurement has also become standard norm for male patients who have voiding issues.[1] A history should be taken in males who have troublesome lower urinary tract symptoms in order to determine the severity of the symptoms and rule out other possible causes.[14] Consequently, it is essential that primary care physicians often ask men over 50 yrs of age about their urine function. Many men worry that symptoms related to the urinary system could indicate prostate cancer. By excluding prostate cancer and convincing the patient that BPH is a common, treatable condition rather than cancer or even a sign of cancer, the primary care physician can assist the patient. For BPH to be effectively managed, prompt diagnosis is crucial. Research has indicated that even mild BPH symptoms can have an equal impact on quality of life as severe chronic obstructive pulmonary disease.[15]

Management

Men with lower urinary tract symptoms (LUTS) due to benign prostatic hyperplasia (BPH) often have two first-line options: conservative lifestyle modifications and medication.[16] According to Kim et al. (2012), BPH is seen as a chronic condition that requires ongoing care, and frequent pharmaceutical therapies like alpha-blockers and 5 α-reductase inhibitors that are linked to negative effects. Thus, research and development were needed to provide herbal medications that were safe, effective, and affordable for long-term care (Kim et al., 2012). As a single herb or in combination, herbal formulations made from plants including *S. repens, P. africanum, C. pepo, U. dioica, L. usitatissmum,* and the plant extract lycopene may be effective therapies for BPH.[17] The anti-inflammatory, anti-tumor, and 5α reductase inhibitory qualities of the ingredients in the Unani formulation were credited with its efficacy. Ultimately, the diuretic effects of the administered Unani formulation can further increase the urinary flow rate without affecting urgency. About 50 phytotherapeutic substances have been found and investigated in either single or compound form for the treatment of BPH, and the number is increasing daily.[18]

Prostatomegaly is managed with various Unani formulations and regimented treatments.

- Ilaj-Bil-Ghiza (Dietotherapy)
- Ilaj-Bil-Dawa (Drug therapy)
- Ilaj-Bil-Tadbeer (Regimental therapy)
- Ilaj-Bil-Yad (Surgery)

Usul-i-Ilaj (Treatment Principles)

• Tanqiya (Evacuation of Morbid Matter i.e Mawad-e Ghaliz).

• Talyin-o-Irkha-o-Tahlil-i-Waram (to relieve, calm, and diminish the edema, or Auram).

• Catheterization for acute retention (Ikhraj-i-Bawl Bazari-a-Qasatir).

Ilaj-Bil-Dawa (Therapeutic):

• Maul-Usul is administered orally with castor oil.

• In the morning, Gulqand and the oral Joshanda (decoction) of the medications listed in Table 1.[13]

Unani Names	Botanical Names	Miqdaar (Quantity)
Badranjboyass	*Nepeta ruderalis* Ham.	10.5gm
Badiyan	*Foeniculum vulgar* Gaertn.	10.5gm

• In the morning, Gulqand and Safoof (Powder) made from the ingredients listed in Table 2 are administered orally.

Unani Names	Botanical Names	Miqdaar (Quantity)
Zanjabil	*Zingiber officinale* Roscoe.	4.5-7.5gm
Turbud	*Ipomea turpethum* Br.	4.5-7.5gm
Mastagi	*Pistacia lentiscus* Linn.	4.5-7.5gm

Complementary and alternative medicine has become a multi-million-dollar industry in the United States over the last 20 years, due to the growth of health food stores and online businesses that promote and sell these medications for the treatment of BPH. In Germany, France, and Austria, herbal remedies are the first line of treatment for moderate LUTS, and they account for up to 90% of all prescriptions written for BPH treatment.

The constituents of the Unani formulation were Pimpinella anisum (Anisoon), Matricaria recutita (Babuna), Linum usitatissimum (Alsi), Cucurbita pepo (Maghz-e-Tukhm-e-Kaddu Shireen), Tribulus terristeris (Khar-e-khasak), and Cucumis sativa (Khyarein).[19] The current worldwide trend is the methodical and planned study and creation of novel medications from natural resources. These days, almost 30% of the therapeutic compounds currently recommended in clinics are derived from natural products. (Yang and colleagues, 2008). These naturally occurring medications were chosen due to their significant medical value. Infection rates have significantly grown in recent years, and antibiotic resistance is becoming a more significant therapeutic issue (Austin et al. 1999).[20] Erectile dysfunction and decreased libido are two common negative side effects of allopathic medications like finasteride and tamsulosin. Finasteride is frequently prescribed for BPH in certain nations, while other people prefer to utilize Croton membranaceus (CM). Some indigenous people mix the two, meanwhile.[21]

Pharmacotherapy, lifestyle advice, surgical alternatives, and phytotherapy are among the diseases' therapeutic options covered by European and non-European standards. Currently used treatments include 5-reductase enzyme inhibitors (dutasteride, finasteride), which decrease the synthesis of DHT and hence prevent androgen signaling. They might cause the prostate gland to shrink after a few months. Erectile dysfunction, decreased libido, and issues with ejaculation are some of their pertinent negative effects. They are only suitable for long-term medication because of their delayed onset of action. Both static (prostate growth decrease with 5-reductase inhibitors) and dynamic (improvement of smooth muscle contractility with 1-blockers) elements are used in medical therapy of BPH. Additionally, the BPH-LUTS may benefit from the use of muscarinic receptor antagonists, vasopressin analogs, and phosphodiesterase-5 inhibitors (PDE5 inhibitors).[22] By blocking sympathetic activity, alpha-blockers relax the smooth muscles of the prostate and bladder neck, which is another method by which they are used to treat BPH. The FDA-approved longer-acting alpha blockers have virtually succeeded prazosin, the first selective alpha-1 blocker. " They consist of alfuzosin, tamsulosin, doxazosin, and terazosin. Alpha reductase blockers are the only ones that cause prostate regression and a decreased risk of BPH problems throughout time, but alpha blockers have a quicker onset and are more effective in the first year than finasteride. Additionally, alpha blockers can cause adverse effects, the most prevalent of which are weariness, lightheadedness, and hypotension.[3] Combination medical treatment Patients with bigger prostates who fulfill the criteria for 5ARIs and can be provided alpha-blockers concurrently have demonstrated greater efficacy with combination medication than with monotherapy or placebo.[23]

Conclusion

The meticulous examination of BPH in contemporary medicine and its recognition in the Greco-Arab (Unani) medical system enlightens Unani classical medicine's understanding of the illness and its management. The conversation also shows how closely the two medical systems perceive ailments. This promotes the identification and testing of medicinal plants and other natural remedies for BPH and its related symptoms. With their various potential adverse effects, releasing natural therapies will help reduce the necessity for surgery and the weight of conventional medications.

Conflict of Interest: The authors declare no potential conflict of interest with respect to the contents, authorship, and/or publication of this article.

Author Contributions: All authors have equal contribution in the preparation of manuscript and compilation.

Source of Support: Nil

Funding: The authors declared that this study has received no financial support.

Informed Consent Statement: Not applicable.

Data Availability Statement: The data supporting in this paper are available in the cited references.

Ethical approval: Not applicable.

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