

## Management of Lower Urinary Tract Symptoms Attributed to Benign Prostatic Hyperplasia (2023)

### About the Guideline

- This guideline panel amendment was created by seven experts representing the American Urological Association.
- The guideline was updated in 2023 and approved by the AUA Board of Directors.
- The guideline provides evidence-based statements on the management of benign prostatic hyperplasia (BPH).

### Key Clinical Considerations

Become familiar with the recommendations and best-practice statements provided in this guideline, especially if you work in an acute care setting.

### Basic Medical Management of BPH/Lower Urinary Tract Symptoms (LUTS)

- A basic evaluation and complete medical history (i.e., sexual history, symptoms, health and fitness, and medications) should be performed on every patient with LUTS. The International Prostate Symptom Score (IPSS) should be utilized. Some patients may also require a post-void residual, pressure flow studies, or uroflowmetry.
- Routine measurement of serum creatinine levels is not recommended in the initial evaluation of patients with LUTS secondary to BPH.
- Perform a urinalysis to rule out other LUTS causes not connected with BPH.
- Refer the patient to a urologist for appropriate evaluation before advising treatment if the initial evaluation and results of a digital rectal exam (DRE) demonstrate the presence of LUTS suggesting prostate cancer. Symptoms of prostate cancer may include hematuria, abnormal prostate-specific antigen (PSA) levels, recurrent infection, palpable bladder, history/risk of urethral stricture, and/or a neurologic disease.
- Before any surgical intervention, assess the prostate shape and size using cystoscopy, transrectal ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI).

### Detailed Management of Patients with a Urologist

- When patients present with LUTS, use the American Urological Association-Symptom Index (AUA-SI) for the objective documentation of symptom severity and frequency from the patient's perspective.

### Interventional Therapy

- Patients with moderate to severe symptoms who are bothered enough to consider therapy should be informed about the benefits and harms of treatment alternatives for LUTS secondary to BPH.

### Watchful Waiting

- For patients who have mild LUTS secondary to BPH and for patients with moderate to severe LUTS who are not bothered by their symptoms, watchful waiting is recommended. During

watchful waiting, the patient is monitored by his physician but receives no active intervention for BPH.

### Medical Management

- **Alpha-adrenergic blockers (alpha blockers)**
  - For patients with bothersome, moderate to severe LUTS secondary to BPH, pharmacotherapy options include alfuzosin, doxazosin, silodosin, tamsulosin, or terazosin.
  - For patients initiating alpha blocker therapy who have a planned cataract surgery, the risk of intraoperative floppy iris syndrome should be discussed with the patient's ophthalmologist.
  - For patients with acute urinary retention (AUR) related to BPH, an oral alpha blocker should be prescribed prior to a voiding trial.
  - Patients should complete at least three days of medical therapy with an alpha blocker before attempting a trial without a catheter.
    - Inform patients who pass a trial without a catheter that they remain at increased risk for recurrent urinary retention.
- **5-alpha-reductase inhibitors (5-ARIs)**
  - Prior to initiating treatment with a 5-ARI, providers should discuss potential side effects with patients, including sexual dysfunction, gynecomastia, dementia, depression, development of diabetes, and post-finasteride syndrome.
  - For symptom improvement, 5-ARI monotherapy is recommended for patients with LUTS/BPH with prostate enlargement as determined by increased prostate volume, elevated PSA, or palpable prostate enlargement on DRE.
  - 5-ARIs are used to prevent the progression of LUTS secondary to BPH and to reduce the risk of urinary retention and the need for prostate-related surgery.
  - 5-ARIs are not recommended for use in men with LUTS secondary to BPH without prostatic enlargement.
  - 5-ARIs are appropriate and effective treatment alternatives for men with LUTS secondary to BPH with evidence of prostate enlargement.
  - Other indications for 5-ARIs include the following:
    - **Hematuria**
      - Finasteride is an effective treatment alternative and an appropriate option for men with refractory hematuria due to prostatic bleeding (other causes of hematuria should be excluded first). Finasteride reduces the risk of subsequent AUR and the need for BPH-related surgery, with its maximum benefit increasing with rising prostate volume or serum PSA. The average patient on finasteride therapy reportedly experiences a 3-point improvement in the AUA-SI.
    - **Prevention of bleeding during transurethral resection of the prostate (TURP)**
      - There is insufficient evidence-based data available to definitively recommend the use of 5-ARIs preoperatively for TURP to reduce intraoperative bleeding and the need for blood transfusions.
- **Phosphodiesterase-5 enzyme inhibitors**
  - Tadalafil 5 mg daily should be discussed as a treatment option, irrespective of comorbid erectile dysfunction.

- This class of medication helps smooth muscle relax in the lower urinary tract. Tadalafil may be used alone or with finasteride.
- Combination treatment with tadalafil and an alpha blocker is not recommended.
- **Anticholinergic agents**
  - For patients with moderate to severe predominant storage LUTS, anticholinergic agents, either alone or in combination with an alpha blocker, may be utilized.
- **Beta-3-agonists**
  - For patients with moderate to severe predominate storage LUTS, combination therapy with beta-3-agonists and an alpha blocker may be offered.
- **Combination therapy**
  - Anticholinergic agents may be considered alone or in combination with an alpha blocker for patients with moderate to severe predominant storage LUTS.
    - If anticholinergics are used as monotherapy, obtain a post-void residual, and monitor for side effects such as gastric emptying or gastrointestinal motility issues.
  - Beta-3-agonists may be considered in combination with an alpha blocker for patients with moderate to severe storage-predominant LUTS.
  - Low-dose tadalafil may be considered along with alpha blockers for the treatment of LUTS/BPH.
  - Low-dose tadalafil may be considered in combination with finasteride for the treatment of LUTS/BPH.
- **Complementary and alternative medicines (CAM)**
  - Dietary supplements, combination phototherapeutic agents, or other nonconventional therapies are not recommended for the management of patients with LUTS secondary to BPH.
  - Saw palmetto extract has no clinical effectiveness on the symptoms of LUTS secondary to BPH and is not recommended for treatment.
  - There is insufficient evidence to determine the clinical effects of *Urtica dioica* therapy for symptomatic relief of LUTS secondary to BPH.

### Minimally Invasive Therapies

- **Transurethral needle ablation (TUNA) of the prostate**
  - TUNA is not recommended for treating LUTS caused by BPH.
- **Transurethral microwave thermotherapy (TUMT)**
  - TUMT is clinically effective in partially relieving LUTS secondary to BPH and is recommended for men with moderate or severe symptoms. Compared to TURP, retreatment surgical rates are higher with TUMT.

### Surgical Procedures

- Surgery is recommended for patients with renal insufficiency that is secondary to BPH, recurrent urinary tract infections or bladder stones, gross hematuria, refractory urinary retention secondary to BPH, or LUTS associated with refractory BPH.
- Surgery is not recommended for patients with an asymptomatic bladder diverticulum; however, these patients should be checked for bladder outlet obstruction.

- **Simple prostatectomy**
  - An open, laparoscopic, or robotic-assisted prostatectomy should be performed based on the expertise of the provider and should be considered only for patients with large to very large prostates.
  - It is strongly recommended that clinicians discuss the potential benefits and risks of surgical complications associated with an open prostatectomy, such as a larger volume of blood loss and longer hospital stays.
- **Laser therapies**
  - Transurethral laser approaches have been associated with a shorter catheterization time and a shorter length of hospital stay, and they have been shown to improve LUTS.
  - Transurethral laser enucleation (holmium laser resection of the prostate [HoLRP]; holmium laser enucleation of the prostate [HoLEP]; thulium laser enucleation of the prostate [ThuLEP]; holmium laser ablation of the prostate [HoLAP, or transurethral side-firing laser ablation]; and photoselective vaporization of the prostate [PVP]) are effective treatment alternatives to TURP and open prostatectomy for men with moderate to severe LUTS and/or for those who are significantly bothered by these symptoms.
  - PVP may be more successful for patients with smaller volume prostates.
  - Selection of the type of laser used should be based on the patient's anatomy and clinical presentation as well as the surgeon's preference, following consultation with the patient.
  - PVP, ThuLEP, and HoLEP should be considered for patients who take anticoagulation medication and who are at a higher risk for bleeding.
- **Transurethral incision of the prostate (TUIP)**
  - TUIP should be offered as a surgical option to patients with prostates less than or equal to 30 g. TUIP results in a significantly reduced risk of ejaculatory disturbance, but it is associated with a slightly higher rate of secondary procedures compared with TURP therapy.
  - It is strongly recommended that clinicians discuss the potential benefits and risks of surgical complications.
- **Transurethral electrovaporization of the prostate (TUVP)**
  - Bipolar TUVP is an appropriate and effective treatment for men with moderate to severe LUTS who are significantly bothered by symptoms.
  - It is strongly recommended that clinicians discuss the potential benefits and risks of surgical complications.
- **Transurethral resection of the prostate (TURP)**
  - TURP is an appropriate and effective primary surgical therapy for men with moderate to severe LUTS and/or for those who are significantly bothered by these symptoms.
  - The choice of a monopolar or bipolar approach should be based on the patient's presentation, anatomy, and the surgeon's experience.
  - It is strongly recommended that clinicians discuss the potential benefits and risks of surgical complications.
- **Water vapor thermal therapy (WVTT)**
  - Patients who want to preserve erectile and ejaculatory function may be eligible for this treatment, however, this therapy is only conditionally recommended.
  - WVTT should be considered for patients with a prostate volume of 30 to 80 mL.

### Additional Treatment Options

- Prostate artery embolization may be considered for select patients.
- Temporary implanted prostatic devices (TIPD) may be considered for patients with a prostate volume between 25 mL and 75 mL and without an obstructive median lobe.
- Prostatic urethral lift (PUL) may be considered for patients with a prostate volume of 30 to 80 mL and the verified absence of an obstructive middle lobe.
  - PUL may also be offered to patients who desire preservation of erectile and ejaculatory function.
- Transurethral microwave therapy (TUMT) is a process that achieves coagulation necrosis of the prostatic tissue, shrinking the tissue over time.
- Transurethral needle ablation is not recommended for the treatment of LUTS/BPH.
- Robotic waterjet treatment may be offered to patients with a prostate volume of 30 to 80 mL.

### Reference

Sandhu, J. S., Bixler, B. R., Dahm, P., Goueli, R., Kirkby, E., Stoffel, J. T., & Wilt, T. J. (2024). Management of Lower Urinary Tract Symptoms Attributed to Benign Prostatic Hyperplasia (BPH): AUA Guideline Amendment 2023. *The Journal of urology*, 211(1), 11–19. <https://doi.org/10.1097/JU.0000000000003698>