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Benign Prostatic Hyperplasia

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Benign prostate hyperplasia (BPH) refers to progressive enlargement of the prostate gland commonly seen in older men. Because the urethra passes through the prostate gland, BPH causes compression of the urethra and obstruction of urinary flow. Chronic urinary obstruction can also lead to increased irritability of the detrusor muscle. Men affected by BPH may complain of difficulty initiating urination, incomplete bladder emptying, urinary urgency, weak urinary stream, dribbling, or nocturia. One prevalence survey found that 42% of men over 50 years old had symptoms, although only one third of these intended to seek treatment.

BPH can progress to acute urinary retention, in which case insertion of a catheter is required to empty the bladder. Urinary retention can be triggered by general anesthesia or by several categories of medication, such as decongestants, anticholinergics, opioids, benzodiazepines, and calcium channel blockers. Fortunately, urinary retention is relatively uncommon, with an annual risk of about 1% for men with BPH.

For most men, therefore, treatment decisions are based on the presence and severity of symptoms. Symptom severity is usually assessed with the American Urological Association Symptom Index, a validated questionnaire readily available online:
http://www.adultpediatricuro.com/apuauass.pdf

Patients with mild symptoms may not require treatment, while those with moderate to severe symptoms may benefit from medical or surgical therapy.

Medical Therapy

Alpha-Blockers Medical treatment is usually the initial approach to BPH. Alpha-blocking agents (Table 1) facilitate bladder emptying by relaxing the urethral sphincter. Non-selective alpha blockers also promote relaxation of vascular smooth muscle, lowering blood pressure, while selective alpha blockers have no effect on resting blood pressure. Multiple randomized trials have shown improved symptom control with alpha blockers compared to placebo.

Clinical benefit is usually apparent after 2 to 4 weeks of treatment. Despite their benefit for symptom control, alpha blockers do not appear to affect the underlying disease process. There is no evidence that these medications reduce the risk of urinary retention or the need for surgical intervention.

Orthostatic hypotension is a common side effect of all alpha blockers. The risk is increased if they are used in combination with medications for erectile dysfunction; in this circumstance, a low starting dose and cautious titration is critical.

5-Alpha Reductase Inhibitors Prostate growth is stimulated by androgenic hormones, especially dihydrotestosterone. Inhibitors of the 5-alpha reductase enzyme (Table 1) block the conversion of testosterone to dihydrotestosterone, causing a reduction in prostate size.

These medications have also been shown to improve symptom control over time, but 6 months of treatment is often necessary before a benefit is observed. They are only effective in men with marked enlargement of the prostate. Patients with a prostate volume of at least 40 mL (normal, 20-30 mL) or a PSA level of at least 1.4 ng/mL are good candidates for 5-alpha reductase inhibitors.

In contrast to alpha blockers, 5-alpha reductase inhibitors have been shown to reduce the risk of urinary retention and surgical intervention. Decreased libido and sexual dysfunction are common side effects.

TIPS FOR DEALING WITH BENIGN PROSTATE HYPERPLASIA

- Evaluate symptom severity with the American Urological Association Symptom Index.
- Prescribe alpha-blockers as the usual initial approach to medical therapy. Selective agents are best for older men at risk for orthostatic hypotension.
- Prescribe 5-alpha reductase inhibitors only to men with a grossly enlarged prostate gland (volume >40 ml or prostate specific antigen level >1.4ng/ml).
- Recommend surgical therapy for men who develop urinary obstruction, and consider surgical therapy for men whose symptoms do not respond to medical therapy.

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Saw Plametto Saw palmetto (Serenoa repens) is an herbal treatment. Studies of its efficacy yield conflicting results. A Cochrane review found limited evidence of modest benefit. The American Urological Association does not endorse its use.

Surgical Therapy Surgery is warranted for men with refractory symptoms, urinary retention, or other complications such as bladder stones or recurrent urinary tract infections. The gold-standard surgical procedure is transurethral resection of the prostate (TURP), which usually provides long-term symptom control. TURP is an inpatient surgical procedure. Hemorrhage, retrograde ejaculation, erectile dysfunction, and urinary incontinence are potential complications.

Several newer surgical procedures (Table 2) are intended to avoid the morbidity associated with TURP. Depending on prostate size, a patient may be a candidate for several minimally-invasive office procedures; however, most of these procedures provide less durable relief than TURP, and re-treatment is often necessary. Holmium laser enucleation of the prostate has less perioperative morbidity than TURP with comparable symptom control for at least 2 years.

Table 1. Medical Treatments

Medication	Category	Typical Dose
Alfuzosin	Nonselective alpha blocker	10 mg daily
Doxazosin	Nonselective alpha blocker	1 to 8 mg daily
Prazosin	Nonselective alpha blocker	2 to 15 mg daily, divided into 2 or 3 doses
Terazosin	Nonselective alpha blocker	1 to 20 mg daily
Silodoasin	Selective alpha blocker	8 mg daily
Tamsulosin	Selective alpha blocker	0.4 mg daily
Dutasteride	5-alpha reductase inhibitor	0.5 mg daily
Finasteride	5-alpha reductase inhibitor	5 mg daily

Table 2. Surgical Treatments

Procedure	Maximum Prostate Size	General anesthesia required
TURP	No limit	YES
Holmium laser enucleation	No limit	YES
"Green light" KTP laser	No limit	NO
Transurethral incision of prostate	30 mL	NO
Transurethral needle ablation	60 mL	NO
Transurethral microwave therapy	100 mL	NO

References and Resources

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