

BPH (Benign Prostate Hyperplasia) Update

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Definition of BPH

- BPH is the complex of symptoms experienced as a result of the troublesome prostate.
- BPH refers to the asymptomatic microscopic detection of prostatic hyperplasia, the benign proliferation of the prostatic stroma and epithelium.

LUTS

Lower Urinary Tract Symptoms (LUTS) can be

- Urologically based, which includes the prostate and the bladder
- Medically based

A comprehensive history, physical and lab evaluation will generally provide the needed clues.

Why We Should Be Concerned with Lower Urinary Tract Symptoms

- Affects 15-60 % of males over the age of 40
- Significant impact
 - Increased risk of falls
 - Decreased quality of life
 - Depression
 - Impaired activities of daily living
- Obstructive causes of LUTS can result in acute urinary retention, eventual need for surgery or renal failure



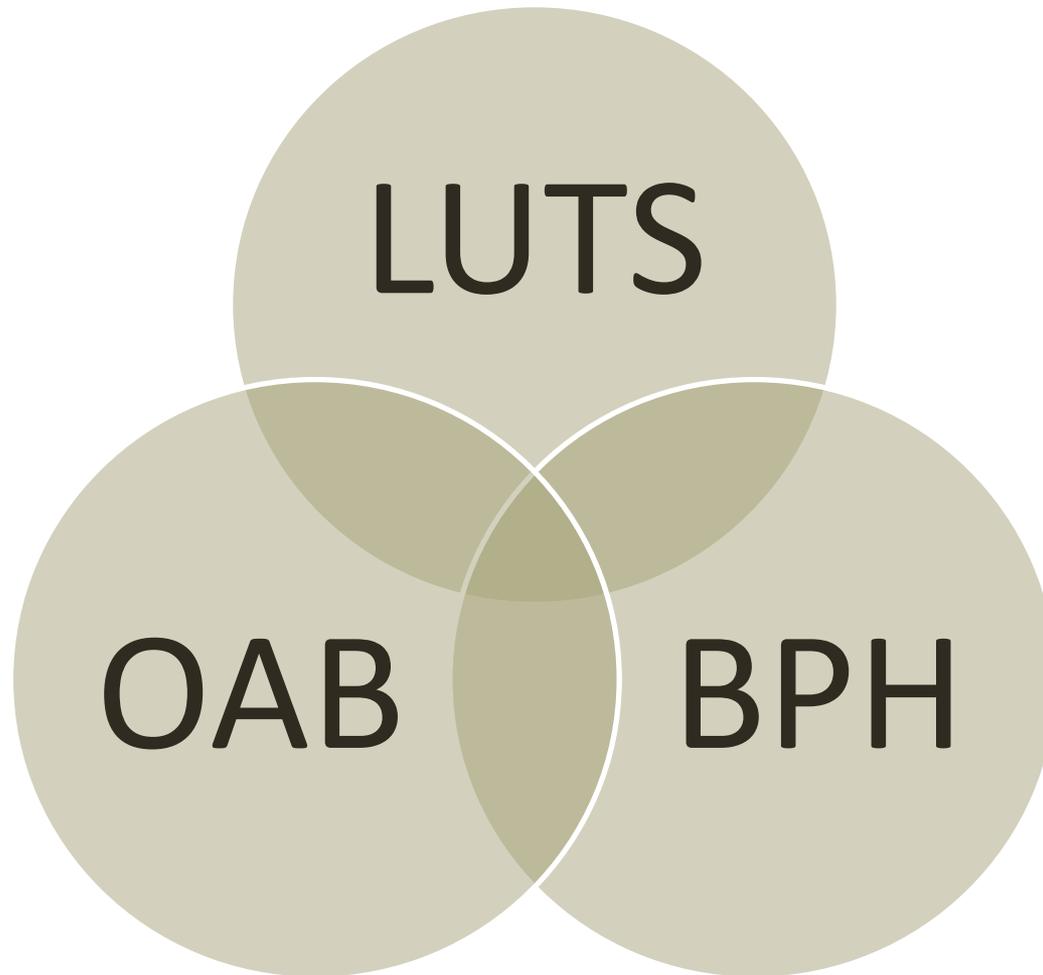
Definition of OAB

Overactive bladder is defined by the International Continence Society (ICS) as:

A syndrome including urinary urgency (the intense, sudden desire to void) with or without incontinence, urinary frequency (voiding during the day) and nocturia (wakening at night to void)



OAB and BPH can Coexist



LUTS generally relates to the Bladder or Prostate

Bladder (Storage)

Urgency

Frequency

Nocturia

Urge Incontinence

Stress Incontinence

Mixed Incontinence

Overflow Incontinence

Prostate (Voiding)

Hesitancy

Poor Flow/weak stream

Intermittency

Straining to void

Terminal dribble

Prolonged urination

Urinary retention

The Evaluation of LUTS: H&P and Labs are Essential

- Medical history
- Surgical history
- Medications
- Voiding diary
- Focused physical examination
- Laboratory tests

The Evaluation of LUTS: Looking for Other Causes

Reversible Causes

Infection, immobility, stool impaction, medications

Differential Diagnosis

Bladder/ prostate cancer, urinary tract infections, stone disease, diabetes, congestive heart failure

Impact of Medications or Diet

Diuretics, antidepressants, alcohol, fluid intake

Comorbid Conditions

Smoking, obesity, ambulatory difficulty

Examples in Medical & Surgical History that may cause LUTS

Diabetes (new onset or poorly controlled)

Causing polyuria/polydipsia

Congestive Heart Failure

Nighttime fluid mobilization

Recent Surgery

Catheterization during surgery, immobilization, constipation from pain medications

A Recent Onset of the Symptoms May Provide a Clue to The Etiology

LUTS May Be Worsened by Medications

Sedatives

Confusion, Secondary Incontinences

Alcohol, Caffeine, Diuretics

Diuresis

Anticholinergics

Impaired detrusor contractility, voiding difficulty, overflow incontinence

Alpha Agonist

Increased outlet resistance, voiding difficulty

Blockers

Decreased ureteral closure, stress incontinence

Calcium Channel Blockers

Reduce bladder smooth muscle contractibility

Angiotensin Converting Enzyme

Induce cough, stress urinary incontinence

First Generation Antihistamines

Increase outlet resistance

Cholinesterase Inhibitors

Precipitate urge incontinence

Opioids

Constipation

The Focused Physical Exam

Abdominal

- Tenderness, masses, distention

Neurological

- Mental and ambulatory status, neuromuscular function

Genitourinary

Meatus and testis

Rectal

- Tone
- Prostate size, shape, nodules and consistency

Laboratory Tests

Urinalysis

- Infection, blood, crystals
- Urine is not an adequate screener for diabetes since the blood sugar must be above 180mg/dl before it spills into the urine

A Random or Fasting Blood Sugar

- Diabetes

Prostate Specific Antigen

- Prostate specific not cancer specific but can be used in screening
- Excellent as a surrogate marker for prostate size
- PSA is more accurate than DRE to estimate prostate size
- PSA of 1.5ng/ml equals a prostate volume at least 30 grams

Indications for Referral

- History of recurrent UTI or other infection
- Microscopic or gross hematuria
- Prior genitourinary surgery
- Elevated prostate-specific antigen
- Abnormal prostate exam
- Suspicion of neurological cause of symptoms
- Meatal stenosis
- History of genitourinary trauma
- Pelvic pain
- Uncertain diagnosis or patient choice

Treatment Alternatives for Moderate to Severe BPH

- **Watchful Waiting**
- **Medical Therapies**
 - Alpha-Blockers:
 - Alfuzosin
 - Doxazosin
 - Tamsulosin
 - Terazosin
 - Silodosin
 - 5-Alpha-reductase inhibitors (5-ARIs)
 - Dutasteride
 - Finasteride
 - Combination Therapy
 - Alpha blocker and 5-alpha-reductase inhibitor
 - Alpha blocker and anticholinergics
 - Anticholinergic Agents

Treatment Alternatives cont...

- **Complimentary and Alternative Medications (CAM)**
- **Minimally Invasive Therapies**
 - Transurethral needle ablation (TUNA)
 - Transurethral microwave therapy (TUMT)
- **Surgical Therapies**
 - Open prostatectomy
 - Transurethral holmium laser ablation of the prostate (HoLAP)
 - Transurethral holmium laser enucleation of the prostate (HoLEP)
 - Holmium laser resection of the prostate (HoLRP)
 - Photo selective vaporization of the prostate (PVP)
 - Transurethral incision of the prostate (TUIP)
 - Transurethral vaporization of the prostate (TUVP)
 - Transurethral resection of the prostate (TURP)

Behavioral Therapy for BPH

- Relax
- Take appropriate time
- Empty to completion
- Restriction of fluid intake
- Moderate daily exercise



Symptom: Bother Drives Treatment

Watchful waiting requires education as to what to expect

OAB symptoms may worsen

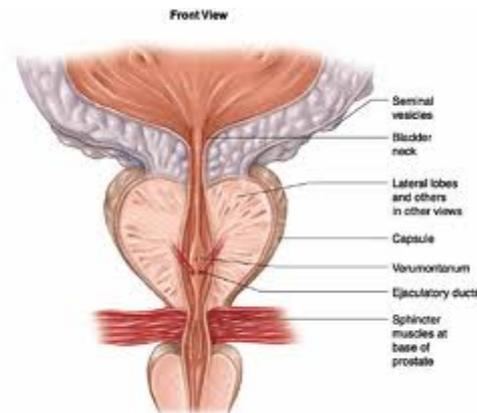
- Nocturia puts patient at risk of falls
- Quality of life can be severely affected

BPH can be a progressive disease and patients with large prostates are more at risk

- Decreasing flow
- Increasing incidence of acute urinary retention (AUR)
- Increased need for surgical intervention

Alpha Blockers

- Relax prostatic smooth muscle by inhibiting α_1 -adrenergic mediated contraction
- Ease pressure on urethra and bladder
- May improve flow and bothersome symptoms within days to weeks
- Do not affect prostate size or interfere with the natural history of the disease



Alpha- Blockers

Inhibit α_1 -adrenergic mediated contraction of prostate smooth muscle, thereby relieving bladder outlet obstruction

Non-Uroselective

Terazosin 1, 2, 5, 10 mg daily

Doxazosin 1, 2, 4, 8 mg daily

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Uroselective

Tamsulosin 0.4 mg daily

Alfuzosin 10 mg daily

Silodasin 8 mg daily

Potential side effects (decreased incidence with uroselective agents)

- Asthenia, fatigue, dizziness
- Postural hypotension
- Congestion, rhinitis
- Abnormal ejaculation

Intraoperative Floppy Iris Syndrome (IFIS)

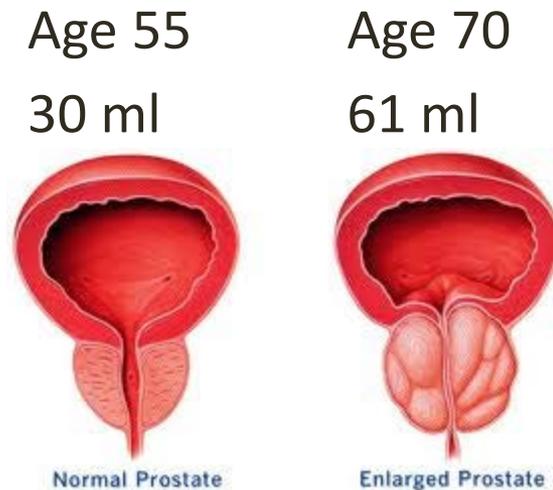
- Described by Chang and Campbell in 2005
- Progressive intraoperative miosis despite dilation
- Billowing of a flaccid iris
- Iris prolapse toward incision site during phacoemulsification for cataracts
- Original report linked this condition with preoperative use of Tamsulosin
- An iris dilator muscle inhibition as potential mechanism

IFIS Facts:

- 43% to 90% risk in 10 retrospective and prospective studies among men taking Tamsulosin
- Risk appears to be lower with older, generic alpha blockers 0% to 6%
- Insufficient data to estimate risk with alfuzosin
- Dose or duration is unclear
- No certainty that stopping alpha blocker before surgery mitigates the risk
- If ophthalmologist is aware of use of alpha blockers, pre and intraoperative precautions reduce risk of IFIS

Natural History of Prostate Growth

Based on data from a study by Roehrborn and colleagues, a 55 year old man who has a 30 ml prostate volume, is experiencing symptoms, and has a PSA of 1.5 ng/ml can expect his prostate to approx. double in size over the next 15 years.



Rationale Behind Treating Reduction of Prostate Size

- Prostate volume increased by a mean of approx.. 3.5% to 5% annually in men with BPH over 50 years of age in clinical trials up to 4.5 years
- As the prostate grows it constricts the urethra, resulting in varying levels of obstructive and/or irritative urinary symptoms. In severe cases urine flow is entirely obstructed
- In a 4-year controlled clinical study, 12% of men with symptomatic BPH receiving an alpha blocker alone (n=1611) progressed to AUR or BPH related surgery
- Risk factors for progression of BPH include a total prostate volume of 31 ml and a PSA of > 1.6ng/ml

5 Alpha Reductase Inhibitors

Blocks conversion of testosterone to dihydrotestosterone (DHT)

Blockage of DHT shrinks the prostate and prevents future growth

Improve flow and bothersome symptoms, but may take 3-6 months

In 6-12 months the prostate should shrink on average approx. 25% and the PSA will decrease on average approx. 50%

A Note of Caution

- Proscar
- Avodart
- Baseline PSA before starting therapy
- After 6 months think x 2
- You want to see a 50% reduction
- If it goes up; needs to be followed closer

Combination Therapy of an AB with a 5-ARI

Combination therapy of AB (Tamsulosin) with 5-ARI (Dutasteride) outperforms either monotherapy alone.

MTOPS: Combination Therapy is superior to Alpha Blockers or 5-ARI in preventing progression and improving symptoms

Combat: Tamsulosin, Dutasteride and Combination

Vol >30 ml by TRUS

PSA > 1.5 ng/ml

****Combination Therapy Results in Significant Improvement****

Follow Up on the Patient Treated for BPH

It is important to note that ABs are likely to provide response within 2-4 weeks, whereas 5ARIs may take 3-6 months

Since ABs are the mainstay of therapy for all patients regardless of the prostate size the patient can expect quick response within that 2-4 week period

A good response requires only periodic follow up and patient awareness on what to do with worsening symptoms

If no, or minimal, response is noted then the provider must consider a refractory prostate or, possibly OAB

Failure of Treatment for BPH

The PCP should consider that the AB may not actually failed in relieving the obstruction, it is just that the most bothersome symptoms may be the result of storage complications (i.e. OAB)

Referral is an option for the provider not comfortable treating the possible OAB component

Safety Tips for OAB in Males

If flow is good, obstruction unlikely

If PVR residual is less than 50 ml, causing retention when treating OAB is extremely unlikely

- **Fact:** most PCP's will not have bladder scanner and will not want to catheterize a patient
- **Fact:** most PCP's will have access to an ultrasound unit and can order a post void residual

Use common sense, if you are treating the patient for voiding too frequently OAB and they have not voided in 6-8 hours or have a sense to void but cannot, have them contact you

Complimentary and Alternative Medicines (CAM)

AUA guidelines:

- No dietary supplement, phototherapeutic agent recommended for management of LUTS secondary to BPH
- Saw Palmetto- data available does not suggest a clinically meaningful effect on LUTS
- Urtica Dioica- no sufficient data to recommend for or against its use

Reasons for Referral

- Failure of prescribed therapy
- Worsening of PVR
- Patient wants to explore more aggressive therapy
- Indication for referral (as previously shown in Definition of BPH slide)

QUESTIONS?

Thank You

