Current Management of Benign Prostatic Hyperplasia

Ronald Yap, MD, MBA
DISCLOSURES

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SESSION OBJECTIVES

• Summarize the presentation of BPH including epidemiology and symptoms.
• Describe diagnostic testing for BPH.
• Define the current treatment guidelines for management of BPH.
BPH Management

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The Prostate – Location and Function
What is BPH?

- Benign Prostatic Hyperplasia
- Increased prostate cell growth within the transition zone of the prostate
- Usually develops after age 40
- Histologic prevalence approximately equal to age
What is BPH?

[Diagram showing normal prostate vs. enlarged prostate/BPH]
Effect of BPH in the USA

• 6.5 million white men have BPH
• 1.1 billion dollars of directly spend for this condition in 2000
• “Baby Boom” generation is aging
  – <55 = +3.2%
  – 55-64 = +25%
  – 65-74 = +2.4%
  – 75-84 = +5.6%
  – 85+ = +20.2%

US Census Bureau 2000-2005
Effect of BPH in the USA

- Quality of life impairments
  - Physical functioning
  - General health perception + Vitality
  - Role limitations due to emotional problems
  - Mental Health
  - Social Functioning
- Quality of life impairments similar/worse than
  - Gout
  - HTN
  - Angina
  - Diabetes
Lower Urinary Tract Symptoms (LUTS)

- Irritative
  - Frequency
  - Urgency
  - Nocturia
- Obstructive
  - Hesitancy
  - Weak Stream
  - Dribbling
  - Sensation of Incomplete Emptying
Potential Sequelae of BPH

- Bladder Damage
- Urinary Tract Infection (UTI)
- Kidney Damage
- Bladder Stones
- Prostate Bleeding
Evaluation for BPH

- History
- AUA Symptom Score / IPSS
- Physical Exam with Digital Rectal Exam
- Urinalysis
- Ultrasound Post Void Residual
- PSA Test
- Voiding Diary
AUA/IPSS Score

- Seven item questionnaire addressing:
  - Incomplete emptying
  - Frequency
  - Intermittency
  - Urgency
  - Weak Stream
  - Straining
  - Nocturia

- Scored from 0-35

- IPSS = AUA score + QOL question
AUA/IPSS Score

- 0-7 = Mild
- 8-19 = Moderate
- 20-35 = Severe
Do you have any problems when you urinate? We recommend that you talk with a health care provider if your total score on the first seven questions is 8 or greater or if you are bothered at all.

Have you noticed any of the following when you have gone to the bathroom to urinate over the past month? Circle the correct answer for you and write your score in the right-hand column.

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Less than 1 time in 5</th>
<th>Less than half the time</th>
<th>About half the time</th>
<th>More than half the time</th>
<th>Almost always</th>
<th>Your Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Incomplete emptying — It does not feel like I empty my bladder all the way.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Frequency — I have to go again less than two hours after I finish urinating.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Intermittency — I stop and start again several times when I urinate.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Urgency — It is hard to wait when I have to urinate.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Weak stream — I have a weak urinary stream.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Straining — I have to push or strain to begin urination.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>None</th>
<th>1 time</th>
<th>2 times</th>
<th>3 times</th>
<th>4 times</th>
<th>5 times or more</th>
<th>Your Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nocturia — I get up to urinate after I go to bed until the time I get up in the morning.</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>

Total AUA Symptom Score
Total score: 0-7 mild symptoms; 8-19 moderate symptoms; 20-35 severe symptoms

<table>
<thead>
<tr>
<th>Quality of life due to urinary symptoms</th>
<th>Delighted</th>
<th>Pleased</th>
<th>Mostly satisfied</th>
<th>Mixed: about equally satisfied and dissatisfied</th>
<th>Mostly dissatisfied</th>
<th>Unhappy</th>
<th>Terrible</th>
</tr>
</thead>
<tbody>
<tr>
<td>If you were to spend the rest of your life with your urinary condition the way it is now, how would you feel about that?</td>
<td>Delighted</td>
<td>Pleased</td>
<td>Mostly satisfied</td>
<td>Mixed: about equally satisfied and dissatisfied</td>
<td>Mostly dissatisfied</td>
<td>Unhappy</td>
<td>Terrible</td>
</tr>
</tbody>
</table>
Treatment

• No Bother or Complications – Watchful Waiting
• No Bother but Complications – Consider Management
• Bothersome – Consider Management
Treatment

- Medical Therapy
  - Alpha Blockers
  - Five Alpha-reductase Inhibitors
  - Phosphodiesterase Type 5 Inhibitor
Alpha Blockers

- Reduce adrenergic tone to the prostatic capsule and bladder neck

- Drugs
  - Doxazosin (Cardura)
  - Terazosin (Hytrin)
  - Tamsulosin (Flomax)
  - Alfuzosin (Uroxatral)
  - Silodosin (Rapaflo)
Alpha Blockers

- Side Effects
  - Hypotension
  - Lightheadedness/Dizziness
  - Nasal Congestion
  - Retrograde Ejaculation
  - Intraoperative Floppy Iris Syndrome
Five Alpha-Reductase Inhibitors

- Block conversion of T to DHT in prostate
- Slowly reduce prostate obstruction
- Drugs:
  - Finasteride (Proscar)
  - Dutasteride (Avodart)
  - Dutasteride + Tamsulosin
    - (Jalyn)
Five Alpha-Reductase Inhibitors

• Side Effects
  • ED
  • Decreased Ejaculate
  • Breast Tenderness/Enlargement
• PSA reduced by 50%
Five Alpha-Reductase Inhibitors

- PCPT - Prostate Cancer Prevention Trial
  - 18.4% vs. 24.4% prostate cancer risk
  - 37% vs. 22.2% of cancers were high grade

- REDuction by DUtasteride of prostate Cancer Events (REDUCE) trial
  - 19.9% vs. 24.9% prostate cancer risk
  - No increase in high grade cancer risk
  - Very effective for BPH

Phosphodiesterase Type 5 Inhibitor

- Tadalafil (Cialis)
- FDA approval October 6, 2011 for BPH
- Most useful for coincident BPH and ED
Phosphodiesterase Type 5 Inhibitor

• Prevents breakdown of cGMP in smooth muscle by PDE5
• Allows NO to be more effective
• No not use with nitrates

• Side Effects:
  • Headache
  • Dizziness
  • Flushing
  • Reflux
  • Back pain
Combination Medical Therapy

- MTOPS – Medical Therapy of Prostatic Symptoms
- 3047 Men
  - Placebo
  - Doxazosin 8 mg
  - Finasteride 5 mg
  - Doxazosin + Finasteride
  - 4.5 year follow up

Combination Medical Therapy

- COMBAT – Combination of Avodart and Tamsulosin Study
  - 4844 Men
  - Tamsulosin 0.4 mg
  - Dutasteride 0.5 mg
  - Tamsulosin + Dutasteride
  - 4 year followup
Combination Medical Therapy

- Combination therapy superior to monotherapy
  - Progression
  - Urinary retention
  - BPH Surgery
Supplements

• Saw Palmetto (Serenoa repens)
• Pygeum africanum
• Stinging Nettle (Urtica dioca)
• South African Star Grass (Hipoxis rooperi)
• Rye Pollen (Secale cereale)
Saw Palmetto

- American dwarf palm tree
- Phytotherapy is derived from fruit extract
Supplements

- Well tolerated
- Not superior to placebo or medical therapy
  - AUA Score
  - Nocturia
  - Peak Flow
  - Prostate Size

Surgical Management

• Indications
  • Patient Preference
  • Complications of BPH
  • Not responsive to medical therapy

• Types
  • Office Based (TUMT/TUNA/Urolift)
  • Transurethral Resection (TURP)
  • Laser (KTP/HOLAP/HOLEP)
  • Open Enucleation
Needle and Microwave Therapy

- TUNA - Transurethral Needle Ablation
- TUMT – Transurethral Microwave Therapy
- Office Based Ablation
- Gland < 40 grams
- Durability unknown

Urolift

- FDA cleared Sept 2013
- Prostatic “strut”
- Lateral lobe obstruction only
- Moderate LUTS
- Small prostates
- Limited coverage
Prostatic Punch

- Used to resect median bar
- “Diamond” Jim Brady
- Brady Urological Institutes
Transurethral Procedures
TURP

- Transurethral Resection of the Prostate
- Bladder irrigation
- Hospital Stay
- TUR Syndrome
- Size < 90 grams
- Bipolar TURP
Laser Treatment

• Benefits
  • No TUR syndrome
  • Less bleeding
  • Ambulatory procedure
• As durable as TURP
• No size limitation
• Can do on aspirin, coumadin/plavix
Laser Treatment

• Ablation
  • KTP ("Greenlight") Laser
  • Holmium Laser (HOLAP)

• Enucleation
  • Holmium Laser (HOLEP)
Laser Prostate Surgery
Laser Ablation

Preop  Intraop  Postop
Greenlight Data

- Goliath trial – Noninferiority vs. TURP out to 1 year
- ACS NSQIP Database –
  - Less pneumonia
  - Less transfusions
  - Less reoperation
  - Shorter LOS
Questions ?