Consensus Meeting for Asian-Pacific BPH Guideline

Byung Ha Chung

Yonsei University Health System
Contents

- Diagnosis and Treatment Guidelines for BPH
- Prostate Volume
- PSA value
- Symptom Assessment Questionnaires
- Treatment Patterns
Diagnosis and Treatment Guidelines for BPH

(1) AUA 2010, EAU 2010 Guidelines

(2) Survey - Australia, China, Chinese Taipei, Hong Kong, Indonesia, Japan, Korea, Malaysia, Philippines
<table>
<thead>
<tr>
<th></th>
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<tbody>
<tr>
<td>TRUS</td>
<td>Optional</td>
<td>Optional</td>
</tr>
<tr>
<td>UFM / PVR</td>
<td>Optional</td>
<td>Recommended</td>
</tr>
</tbody>
</table>
2010 AUA Guidelines

- Basic Management
- Detailed Management
**Initial Diagnosis**
- Hx & P/Ex (DRE)
- Severity & Bother (AUA-SI)
- Urinalysis
- Serum PSA
- Freq/Vol Chart

**Complicated LUTS:**
- Suspicious DRE
- Hematuria
- Abnormal PSA
- Pain
- Infection
- Palpable Bladder
- Neurological Disease

**If life expectancy > 10 yrs and/or**
When significant nocturia is a predominant Sx

**Polyuria**
1. 24-hour output ≥ 3 liters
   - Lifestyle and fluid intake is to be reduced
2. Nocturnal polyuria ≥33% output at night
   - Fluid intake to be reduced

**Bothersome LUTS**
- No Polyuria

**Success**
- Continue Tx

**FAIL**

**Detailed Management**
Detailed Management for Persistent Bothersome LUTS after Basic Management

Recommended Tests:
- Validated questionnaires
- FVC (Frequency/Volume Chart)

Optional Tests:
- Flow rate recording
- Residual urine

Evidence of BOO
Discuss RX options shared decision

Medical Therapy Option

Mixed OAB and BOO
- Antimuscarinics
- α-blocker

Predominant BOO

- Small gland and/or low PSA
- α-blocker
- Larger gland and/or higher PSA
- α-blocker and/or 5α-reductase inhibitor

Failure

Offer MIST or surgery to patient

Evaluation clearly suggestive of Obstruction? (Qmax <10 mL/s)

- Yes
- No

Pressure-flow studies

Obstruction?

- Yes
- No

Treat appropriately. If interventional therapy is pursued, patients need to be informed of possibly higher failure rates.

Proceed with selected techniques

PSA <1.5 ng/ml

PSA >1.5 ng/ml
Several Comments

5ARI

- **prevent** progression of LUTS secondary to BPH
- **reduce** the risk of **urinary retention**
  and **future prostate-related surgery**

- Should **NOT** be used, if **without prostate enlargement**

Other indication of 5ARI

- **Refractory hematuria** presumably due to prostate bleeding
  (after exclusion of any other causes of hematuria)
Antimuscarinics

- effective treatment alternatives when LUTS are predominantly irritative (without an elevated PVR)

Complementary and Alternative Medicines (CAM)

- No dietary supplement, combination phytotherapeutic agent or other nonconventional therapy is recommended

- Available data: Saw palmetto DOES NOT have meaningful effect
- Urticadioica: don’t provide a sufficient evidence base
Several Comments

Minimally Invasive Therapy

Safety recommendations for:

- Transurethral needle ablation of the prostate (TUNA)
- Transurethral microwave thermotherapy (TUMT)
Surgical Procedures

Indication of Surgery:

- renal insufficiency secondary to BPH
- recurrent UTIs, bladder stones or gross hematuria due to BPH
- LUTS refractory to other therapies
- The presence of a bladder diverticulum is not an absolute indication
  (unless associated with recurrent UTI or progressive bladder dysfunction)
Several Comments

TURP

Appropriate and effective primary alternative for surgical therapy

Open Prostatectomy

Appropriate and effective treatment alternative for men with:
- moderate to severe LUTS and/or who are significantly bothered by these symptoms.

The choice of approach should be based on:
- the patient’s presentation, anatomy, the surgeon’s level of training & experience, and a discussion of the potential benefit and risks for complications.
Several Comments

Effective alternatives to TURP & Open prostatectomy - Laser Therapies

- Transurethral holmium laser ablation of the prostate (HoLAP)
- Transurethral holmium laser enucleation of the prostate (HoLEP)
- Holmium laser resection of the prostate (HoLRP)
- Photoselective vaporization of the prostate (PVP)

The choice of approach should be based on:
- the patient’s presentation, anatomy, the surgeon’s level of training and experience,
- and a discussion of the potential benefit and risks for complications.
Several Comments

Laser Therapies

- Emerging evidence suggests a possible role of transurethral enucleation and laser vaporization as options for men with very large prostates (> 100 g).

- There are insufficient data on which to base comments on bleeding.

Other Surgical Options

- Transurethral incision of the prostate (TUIP)
- Transurethral vaporization of the prostate (TUVP)
- Laparoscopic and robotic prostatectomy (considered investigational)
EAU Guidelines
2004 EAU Guidelines

European Urology

EAU 2004 Guidelines on Assessment, Therapy and Follow-Up of Men with Lower Urinary Tract Symptoms Suggestive of Benign Prostatic Obstruction (BPH Guidelines)

Stephan Madersbacher, Gerasimos Alivizatos, Jorgen Nordling, Carlos Rioja Sanz, Mark Emberton, Jean J.M.C.H. de la Rosette

<table>
<thead>
<tr>
<th>Assessment</th>
<th>EAU 2004 recommendation</th>
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<tbody>
<tr>
<td>Medical history</td>
<td>recommended</td>
</tr>
<tr>
<td>Symptom score</td>
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</tr>
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<td>Physical examination including DRE</td>
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<tr>
<td>Prostate specific antigen</td>
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<td>Creatinine measurement</td>
<td>recommended</td>
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<td>Urinalysis</td>
<td>recommended</td>
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<tr>
<td>Flow rate</td>
<td>recommended</td>
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<td>Post-void residual volume</td>
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<td>Pressure flow studies</td>
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<td>Endoscopy</td>
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<td>Imaging of the upper urinary tract</td>
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<td>Imaging of the prostate</td>
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<td>Voiding charts (diaries)</td>
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<tr>
<td>Excretory urography</td>
<td>not recommended</td>
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<tr>
<td>Filling cystometry</td>
<td>not recommended</td>
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<tr>
<td>Retrograde urethrogram</td>
<td>not recommended</td>
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<tr>
<td>Computed tomography</td>
<td>not recommended</td>
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<tr>
<td>(Transrectal) magnetic resonance imaging</td>
<td>not recommended</td>
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* For detailed information see text.
<table>
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<tr>
<th>Treatment</th>
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<td>Watchful waiting</td>
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<tr>
<td>Medical therapy</td>
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<tr>
<td>α1-blocker</td>
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<tr>
<td>Alfuzosin</td>
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<tr>
<td>Doxazosin</td>
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<td>Tamsulosin</td>
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<tr>
<td>Terazosin</td>
<td>recommended</td>
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<tr>
<td>5ARI</td>
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<td>Dutasteride</td>
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<td>Finasteride</td>
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<td>Combination therapy</td>
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<td>α1-blocker plus 5ARI</td>
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<tr>
<td>Plant extracts</td>
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<td>Minimally invasive therapies</td>
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<td>High-energy TUMT</td>
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<td>TUNA</td>
<td>recommended</td>
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<tr>
<td>Prostatic stents</td>
<td>recommended</td>
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<tr>
<td>Surgical therapies</td>
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<td>TUIP</td>
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<tr>
<td>TURP</td>
<td>recommended</td>
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<tr>
<td>Open prostatectomy</td>
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<tr>
<td>Transurethral holmium laser enucleation</td>
<td>recommended</td>
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<tr>
<td>Transurethral laser vaporization(^b)</td>
<td>recommended</td>
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<tr>
<td>Interstitial laser coagulation(^b)</td>
<td>recommended</td>
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<tr>
<td>Transurethral laser coagulation(^b)</td>
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<tr>
<td>Emerging therapies</td>
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<tr>
<td>Ethanol injection</td>
<td></td>
</tr>
<tr>
<td>High-intensity focused ultrasound</td>
<td></td>
</tr>
<tr>
<td>Water-induced thermotherapy</td>
<td></td>
</tr>
<tr>
<td>PlasmaKinetic™ tissue management</td>
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</table>
Watchful Waiting
Men with mild symptoms are suitable for watchful waiting
Men with LUTS should be offered lifestyle advice prior to or concurrent with treatment

Alpha Blockers
α-blockers should be offered to men with moderate to severe LUTS

5ARIs
Prevent disease progression with regard to AUR and need for surgery
Several Comments

Antimuscarinics
- moderate to severe LUTS, predominantly bladder storage symptoms
- caution is advised in men with bladder outlet obstruction

Phytotherapy
The Guidelines committee is unable to make specific recommendations about phytotherapy of male LUTS

Desmopressin
for the treatment of nocturia based on a polyuric background
**Several Comments**

**Alpha Blocker + 5ARI**
- Moderate to severe LUTS, enlarged prostates, and reduced Qmax (men likely to develop disease progression)
- Combination treatment is **NOT** recommended for **short-term** therapy (< 1 yr)

**Alpha Blocker + Antimuscarinics**
if symptom relief has been **insufficient with the monotherapy** of either drug

**PDE5Is**
inhibitors reduce moderate to severe male LUTS
Prostate Volume

(1) “Large volume” : “Cut-off points”?

(2) Volume Measurement: DRE / TRUS / Abdominal SONO / MRI
(1) “Large volume”: “Cut-off points”?
The prostate volumes of Korean men are smaller than those of the westerner!

<table>
<thead>
<tr>
<th>Age group</th>
<th>Korean</th>
<th>Westerner</th>
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<tbody>
<tr>
<td>50-59</td>
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<tr>
<td>Baseline PSA (ng/ml)</td>
<td>1.6</td>
<td>2.1</td>
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<tr>
<td>Baseline PV (ml)</td>
<td>31.5</td>
<td>39.3</td>
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<tr>
<td>60-69</td>
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<tr>
<td>Baseline PSA (ng/ml)</td>
<td>2.4</td>
<td>2.7</td>
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<tr>
<td>Baseline PV (ml)</td>
<td>37.4</td>
<td>44.8</td>
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<tr>
<td>70-79</td>
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<td></td>
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<tr>
<td>Baseline PSA (ng/ml)</td>
<td>2.9</td>
<td>2.9</td>
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<tr>
<td>Baseline PV (ml)</td>
<td>36.9</td>
<td>43.7</td>
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<tr>
<td>All</td>
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<tr>
<td>Baseline PSA (ng/ml)</td>
<td>2.2</td>
<td>2.6</td>
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<tr>
<td>Baseline PV (ml)</td>
<td>36.9</td>
<td>43.7</td>
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</tbody>
</table>

“Large volume”: “Cut-off points”?

- 5716 Korean men
- PVs were obtained from Roehrborn’s equations
- ROC curves - to evaluate the ability of PSA to predict threshold PV
- Average cut-off for Korean men 35cc

- Age Related PSA for PV >35 cc
  - 50’s → 1.2 ng/ml
  - 60’s → 1.6 ng/ml
  - 70’s → 2.0 ng/ml

- Caucasian 40 cc PV = Korean PV of 35 cc’s
(2) Volume Measurement

: DRE / TRUS / Transabdominal US / MRI
TRUS vs MRI vs RP specimen

- **Accuracy**: MRI > TRUS

- **However**, TRUS is inexpensive & almost as accurate as MRI.

Chung et al, Urol int 2006

Transrectal Ultrasound versus Magnetic Resonance Imaging in the Estimation of Prostate Volume as Compared with Radical Prostatectomy Specimens

Jae Seok Lee   Byung Ha Chung

Department of Urology, Urological Science Institute, Yonsei University College of Medicine, Seoul, Korea
TRUS vs Transabdominal US

Stravodimos KG et al, Int Urol Nephrol 2009

TRUS versus transabdominal ultrasound as a predictor of enucleated adenoma weight in patients with BPH
A tool for standard preoperative work-up?

Konstantinos G. Stravodimos · Andreas Petrolekas · Theodoros Kapetanakis · Stavros Vourekas · Georgios Koritsiadis · Ioannis Adamakis · Dionysios Mitropoulos · Constantinos Constantinides

*TRUS* is more accurate than *transabdominal ultrasound* in predicting adenoma volume - its standard use might lead to fewer open approaches, with consequent less morbidity and hospitalization.
Survey Results

Volume Measurement

: TRUS vs. Abdominal SONO
Survey

Initial evaluation – TRUS vs. Abdo SONO

<table>
<thead>
<tr>
<th>Country</th>
<th>Author</th>
<th>DRE</th>
<th>TRUS (Routine)</th>
<th>Abdominal SONO</th>
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<td>Japan</td>
<td>Tetsuro Matsumoto</td>
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<td>Yasutomo Nasu</td>
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<td>China</td>
<td>Ming Li</td>
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<td>Hong Kong</td>
<td>Anthony Ng</td>
<td>Yes</td>
<td>No</td>
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<td>Chinese Taipei</td>
<td>Hong-Jen Yu</td>
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<td>Australia</td>
<td>David Malouf</td>
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<td>Malaysia</td>
<td>Zulkifli Zainuddin</td>
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</table>

Zulkifli Zainuddin

Anthony Ng
PSA value

- PSA reference *according to prostate volume*

- PSA reference in Korean men
Relationship between serum PSA and prostate volume in Korean men

Chung et al, BJU 2006
Conclusions

- **PSA-PV relationship** in Korean men is similar to that in Caucasians
- But, Korean men have **a slightly lower PSA level** and **a smaller PV** than Caucasians.
Comparison of serum PSA levels among white, Japanese, and Korean men

<table>
<thead>
<tr>
<th>Age Range (yr)</th>
<th>White</th>
<th>Japanese</th>
<th>Korean 1)</th>
<th>Korean 2)</th>
<th>Korean 3)</th>
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<td>30-39</td>
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<td>1.8</td>
<td>2.35</td>
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<td>40-49</td>
<td>2.5</td>
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<td>2.36</td>
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<td>50-59</td>
<td>3.5</td>
<td>3.0</td>
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<td>2.96</td>
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<td>60-69</td>
<td>4.5</td>
<td>4.0</td>
<td>3.9</td>
<td>3.78</td>
<td>3.56</td>
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<td>70-79</td>
<td>6.5</td>
<td>5.0</td>
<td>5.8</td>
<td>7.49</td>
<td>5.19</td>
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</table>

A given serum PSA value for a Korean man has a different clinical meaning for a white man of the same age!!

PSA and Prostate Volume; Chinese Taipei

Chang et al., J Urol 2006

Correlation Between Serum Prostate Specific Antigen and Prostate Volume in Taiwanese Men With Biopsy Proven Benign Prostatic Hyperplasia

Yu-Lung Chang, Alex T. L. Lin,* Kuang-Kuo Chen, Yen-Hwa Chang, Howard H. H. Wu, Junne-Yih Kuo, William J. S. Huang, Shing-Hwa Lu, Yen-Shen Hsu, Hsiao-Jen Chung and Shyh-Chyi Chang

From the Division of Urology, Department of Surgery, Taipei Veterans General Hospital and Department of Urology, National Yang-Ming University, School of Medicine, Taipei, Taiwan, Republic of China

** PSA per unit prostate volume

Taiwanese > Caucasian

Taiwanese = Japanese
Other Asian countries are also trying to establish their own PSA reference range!

<table>
<thead>
<tr>
<th>Age (yr)</th>
<th>Serum PSA range (ng/ml)</th>
<th>Prostate volume (ml)</th>
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<tbody>
<tr>
<td>40-49</td>
<td>0.25</td>
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<td>50-59</td>
<td>0.35</td>
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<td>70-79</td>
<td>0.65</td>
<td>0.5</td>
</tr>
</tbody>
</table>

(1) Kumamoto et al, BJU 1995  (2) Dalin He et al Urology 2004  (3) Kehinde et al BJU 2005
PSA vs. Prostate Volume

KOREA Yes

JAPAN (Tetsuro Matsumoto)

PSAD > 0.15 : PBx

JAPAN (Hideyuki Akaza)

Yes, but not official

CHINA/HONG KONG

CHINESE TAIPEI (Hong-Jen Yu)

PSAD to decide PBx

AUSTRALIA No

PHILIPPINES No

MALAYSIA

PSA vs. Prostate Volume Survey

Philippines

Dennis Serrano

Zulkifli Zainuddin

Hideyuki Akaza

No official

de PBx
Symptom Assessment Questionnaires

(1) Validation of IPSS
   - in each country’s own language

(2) Other particular questionnaires of own country?
<table>
<thead>
<tr>
<th>Country</th>
<th>Other Questionnaire</th>
<th>IPSS linguistic validation (language)</th>
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</thead>
<tbody>
<tr>
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<td>Malaysia</td>
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Survey: Linguistic validation of IPSS

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Byung Ha Chung

Anthony Ng
Treatment Patterns

(1) Results of Korean Survey

(2) Medical Treatment
- Alpha blocker, Vasopressin
- 5ARI
- Antimuscarinics

(3) Indication of Surgery and Preferred Choice of Surgery
(1) Results of Korean Survey
Practice Patterns in The Medical Treatment of Benign Prostatic Hyperplasia in Korea; A Nationwide Survey on 2007

BH Chung et al. YMJ 2008
Drug of choice for initial treatment option for BPH patients

- Alpha-blocker mono therapy was most common
- The proportion of the ‘combination therapy’ was somewhat high in general hospital

### Drug of choice

- **a-blocker mono-therapy**: 57.2%
- **Combination therapy (a-blocker + 5ARIs)**: 41.6%
- **a-blocker + crude drug (CAM)**: 0.8%
- **5ARIs mono-therapy**: 0.4%

(Base: N = 250)

*Chung et al, YMJ 2008*
Drug of choice by the severity grade of BPH

The role of the ‘combination therapy’ was increased by the severity

<table>
<thead>
<tr>
<th>Drug of choice by the severity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild</td>
</tr>
<tr>
<td>A-blocker mono therapy</td>
</tr>
<tr>
<td>5ARIs mono therapy</td>
</tr>
<tr>
<td>Combination therapy</td>
</tr>
</tbody>
</table>

(P < 0.05 : *, P < 0.01 : **)
(2) Medical Treatment

- Alpha blocker, Vasopressin
- 5ARI
- Antimuscarinics

(3) Indication of Surgery & Preferred Choice of Surgery
Survey Results

- Medical Treatment
- Surgical Treatment
Survey

Alpha-blocker, Vasopressin

Alpha-blocker, Vasopressin

KOREA

JAPAN

(Hideyuki Akaza)

JAPAN

(Tetsuro Matsumoto)

CHINA / HK

CHINESE TAIPEI

(Hong-Jen Yu)

CHINESE TAIPEI

(Yao-chi Chuang)

AUSTRALIA

(David Malouf)

PHILIPPINES

(Dennis Serrano)

INDONESIA

(Doody Soebadi)

MALAYSIA

(Zulkifli Zainuddin)

Alpha-blocker, Vasopressin

Survey
BPH-related Surgery

Survey

<table>
<thead>
<tr>
<th>Country</th>
<th>Surgery Options</th>
<th>Open Prostatectomy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Korea</td>
<td>TURP, PVP, KTP, HoLEP, TUNA, TUMT...</td>
<td></td>
</tr>
<tr>
<td>Japan (Hideyuki Akaza)</td>
<td>Patient's preference &gt;50-75 &amp; TURP is risky</td>
<td>Large, hard bladder stone, Large Sx diverticulum</td>
</tr>
<tr>
<td>Japan (Tetsuro Matsumoto)</td>
<td>TURP (+) HOLEP (-) PVP(-)</td>
<td>&gt;80-100 gm</td>
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<tr>
<td>China / Hong Kong</td>
<td>CHINESE TAIPEI (Hong-Jen Yu)</td>
<td>CHINESE TAIPEI (Yao-chi Chuang)</td>
</tr>
<tr>
<td>Australia</td>
<td>AUSTRALIA (David Malouf)</td>
<td></td>
</tr>
<tr>
<td>Philippines</td>
<td>PVP(-), TUMT(+) Laser (Holmium or Thulium) 80-100 gm + bladder stone</td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>INDONESIA (Doody Soebadi) TURP, HOLEP, PVP – depends on operators</td>
<td>&gt; 100 gm Large bladder stone</td>
</tr>
<tr>
<td>Malaysia</td>
<td>MALAYSIA (Zulkifli Zainuddin)</td>
<td></td>
</tr>
</tbody>
</table>
Conclusions (1)

- **Diagnosis and Treatment Guidelines for BPH**
  - The guidelines of Asian-Pacific countries seem to be consistent with EAU / AUA guidelines.
  - Except - TRUS: mandatory?
  - - TRUS or Transabdominal US?

- **PSA / Vol or PSA reference**
  - Needs to have an Asian-Pacific-Specific reference!
Conclusions (2)

- **Symptom Assessment Questionnaires**
  - Satisfactory in Asian-Pacific countries

- **Treatment Patterns for BPH**
  - **Medical Treatment**
  - **Surgical Treatment**
  - The practice patterns of Asian-Pacific countries seem to be consistent with EAU / AUA guidelines.

- **Surgical Options**
  - Somewhat Different
    - Cost, Surgeon’s Experience / Preference ...
Thank You for Your Attention!!