Lower Urinary Tract Symptoms (LUTS) and Nurse-Led Clinics

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01/02/2018
Lower Urinary Tract Symptoms

• LUTS - one of most common clinical complaints in adult men

• Often described by terms such as:
  BPH  BPO  BPE  BOO

• However LUTS do not necessarily relate to prostate pathology

(EAU, 2015)
Causes of male lower urinary tract symptoms

- OAB - detrusor overactivity
- Benign Prostatic Obstruction (BPO)
- Nocturnal polyuria
- And others ...
- Distal ureteral stone
- Bladder tumor
- Detrusor underactivity
- Neurogenic bladder dysfunction
- Urethral stricture
- Urinary tract infection
- Foreign body
- Prostatitis
Benign Prostatic Obstruction (BPO)

- Most prevalent condition affecting the prostate
  - Accounting for 80% of clinical presentations for prostate disease.

- Estimated to afflict > 2 million men in UK

- Age related autopsy studies
  - 41-50 y = 20%, 51-60y = 50%, > 80y = 90%
  
  (Kirby, 2012)

- Census Ireland: Males 45-64y = 520,243:
  Males 65y and over = 243,314
  
  (CSO, 2011)

- Prevalence increases with age
  - Ageing population = rise in the number of men with BPO
  
  (McAninch & Lue, 2013)
LUTS in early BPO

Voiding symptoms
- Hesitancy
- A reduced stream
- Incomplete emptying
- Double voiding
- Straining
- Post void dribbling
LUTS in early BPO

Voiding symptoms
- Hesitancy
- A reduced stream
- Incomplete emptying
- Double voiding
- Straining
- Post void dribbling

Storage symptoms
- Nocturia
- Frequency
- Urgency
- Urge incontinence
LUTS in advanced BPO

- Acute / Chronic urinary retention
LUTS in advanced BPO

• Acute / Chronic urinary retention
• Overflow incontinence
LUTS in advanced BPO

• Acute / Chronic urinary retention
• Overflow incontinence
• Bladder stone formation
LUTS in advanced BPO

- Acute / Chronic urinary retention
- Overflow incontinence
- Bladder stone formation
- Deterioration in renal function
LUTS in advanced BPO

- Acute / Chronic urinary retention
- Overflow incontinence
- Bladder stone formation
- Deterioration in renal function
- Formation of bladder diverticulum
LUTS in advanced BPO

• Acute / Chronic urinary retention
• Overflow incontinence
• Bladder stone formation
• Deterioration in renal function
• Formation of bladder diverticulum
• Recurrent UTI
Impact on Quality of Life
Assessment of male LUTS at Nurse Led Clinic
Causes of male lower urinary tract symptoms

- OAB - detrusor overactivity
- Benign Prostatic Obstruction (BPO)
- nocturnal polyuria
- detrusor underactivity
- Neurogenic bladder dysfunction
- Urinary tract infection
- Foreign body
- Prostatitis
- Distal ureteral stone
- Bladder tumour
- Urethral stricture
- And others...

LUTS
Clinical Guidelines

• NICE clinical guideline 97: Lower urinary tract symptoms in men: assessment and management (June 2015)
  www.nice.or.uk/guidance/cg97

Assessment of male LUTS

- Health history
- Symptom assessment
- Physical examination

Additional tests
- Urinalysis
- Blood tests
- Uroflowmetry
- Residual urine measurement
- Pressure/flow studies
- Ultrasound
- Cystoscopy
Assessment of male LUTS

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- Ultrasound
- Cystoscopy
Health History

(Focused on urinary tract/general health issues/ overall fitness)

- Medical history
- Surgical history
- Urological history
- LUTS
- Medication history
- Additional information

*EAU recommend a health history must always be taken from men with LUTS (EAU, 2015)*
Health History
(Focused on urinary tract/general health issues/ overall fitness)

• Medical history
Health History
(Focused on urinary tract/general health issues/overall fitness)

• Medical history

• Neurological conditions
  – Parkinson's disease
  – Cerebrovascular accident
  – Cerebral atrophy
  – Multiple sclerosis

• Cardiovascular
  – Heart failure

• Diabetes
Health History
(Focused on urinary tract/general health issues/ overall fitness)

- Medical history
- Surgical history
Health History
(Focused on urinary tract/general health issues/ overall fitness)

• Medical history

• **Surgical history**
  
  • Major abdominal / pelvic surgery
    – AP resection
  
  • Spinal surgery
    – Discectomy
Health History
(Focused on urinary tract/general health issues/overall fitness)

- Medical history
- Surgical history
- Urological history
Health History
(Focused on urinary tract/general health issues/ overall fitness)

• Medical history
• Surgical history
• **Urological history**
  – Urological surgery
  – Urinary tract infections
  – Interstitial cystitis
  – Prostate cancer
  – Bladder cancer
Health History
(Focused on urinary tract/general health issues/ overall fitness)

- Medical history
- Surgical history
- Urological history
- LUTS
Health History
(Focused on urinary tract/general health issues/ overall fitness)

• Medical history
• Surgical history
• Urological history
• LUTS
  – Most bothersome symptoms
  – Duration / timing
  – Quality or severity
  – Setting
  – Associated factors
Health History
(Focused on urinary tract/general health issues/ overall fitness)

- Medical history
- Surgical history
- Urological history
- LUTS
- Medication history
Health History
(Focused on urinary tract/general health issues/ overall fitness)

• Medical history
• Surgical history
• Urological history
• LUTS
• Medication history

• Current medications for LUTS?
• Other meds may affect LUTS
  – Acting directly on lower urinary tract
  – Increased urine production
  – Impaired cognition and mobility
  – Causing constipation
Medications

• Alcohol – Impairs mobility, reduces sensation, sedates, increases frequency/urgency by diuresis
• Alpha blockers- Relax smooth urethral smooth muscle
• Antihistamines – antimuscarinic side effects
• Antimuscarunics/antispasmodics – relax detrusor muscle
• Antipsychotics – voiding difficulties due to antimuscarinic side effects
• Anxiolytics – decreased awareness, drowsiness, impaired mobility
• Caffeine – diuretic, bladder irritant
• Calcium channel blockers – increased frequency, nocturia
• Cytoxics – Hemorrhagic cystitis
• Diuretics – rapid diuresis, polyuria, frequency, urgency, exacerbate OB
• Hypnotics – decreased awareness, drowsiness
• Opiates – bladder sphincter spasm,
• Tricyclic antidepressants – antimuscarinic side effects
• Clonazepam – Urinary incontinence
• Baclofen/Dantrolene – increased frequency, urinary incontinence
• Ketamine- long term bladder damage, interstitial cystitis, frequency, urgency, fibrotic bladder, pain, haematuria
• Nefopam – Antimuscarinic side effects,
• Pseudoephedrine – increased sphincter tone, urinary retention
• Risperidone – sedation, relaxes proximal urethral smooth muscle
Medications

• Alcohol – Impairs mobility, reduces sensation, sedates, increases frequency/urgency by diuresis
• Alpha blockers- Relax smooth urethral smooth muscle
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Health History

(Focused on urinary tract/general health issues/ overall fitness)

- Medical history
- Surgical history
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- LUTS
- Medication history
- Additional information

- Visible Haematuria
- Dysuria
- Incontinence
- Fluid intake
- Nicotine habit
- Alcohol intake
- Bowel habit
- Family Hx (Pca)
- Social Hx
- Age
Assessment of male LUTS

• Health history
• Symptom assessment
Symptom Assessment

• International prostate symptom score (validated questionnaire)
  – Voiding and storage symptoms
  – 7 questions
    • Asymptomatic 0 points
    • Mildly symptomatic 1-7 points
    • Moderately symptomatic 8-19 points
    • Severely symptomatic 20-35 points

• Quality of life question

*EAU recommend a validated questionnaire in all men with LUTS and for re-evaluation during treatment* (EAU, 2015)
**International prostate symptom score [IPSS]**

<table>
<thead>
<tr>
<th>Patient name:</th>
<th>Date: 05/02/2004</th>
</tr>
</thead>
</table>

1. **Incomplete emptying**
   Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

2. **Frequency**
   Over the past month, how often have you had to urinate again less than two hours after you finished urinating?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

3. **Intermittency**
   Over the past month, how often have you found you stopped and started again several times when you urinated?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

4. **Urgency**
   Over the past month, how often have you found it difficult to postpone urination?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

5. **Weak Stream**
   Over the past month, how often have you had a weak urinary stream?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

6. **Straining**
   Over the past month, how often have you had to push or strain to begin urination?
   - Not at all: 0
   - Less than 1 time in 5: 1
   - Less than half the time: 2
   - About half the time: 3
   - More than half the time: 4
   - Almost always: 5

7. **Nocturia**
   Over the past month, how many times did you most typically get up to urinate from the time you went to bed at night until the time you got up in the morning?
   - Not at all: 0
   - 1 time: 1
   - 2 times: 2
   - 3 times: 3
   - 4 times: 4
   - 5 times or more: 5

**Total I-PSS score**

**Quality of Life due to Urinary Symptoms**

If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?

<table>
<thead>
<tr>
<th>Delighted</th>
<th>Please</th>
<th>Mostly satisfied</th>
<th>Mixed feelings</th>
<th>Mostly dissatisfied</th>
<th>Unhappy</th>
<th>Terrible</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
Frequency Volume charts / bladder diaries

Should be used to assess LUTS with a prominent storage component and should be performed for a duration of at least 3 days (EAU 2015)
Assessment of male LUTS

• Health History
• Symptom assessment
• Physical examination
Physical Examination

• Digital rectal examination
  – Size
  – Texture
  – Consistency

• Suprapubic Area
  – Palpable bladder

• Genital examination
  – Phimosis
  – Meatal stenosis

• Focused neurological examination

• ? Lower limb Oedema

**EAU recommendation (2015)** – routine examination for all men with LUTS
Assessment of male LUTS

- Health History
- Symptom assessment
- Physical examination
- Urinalysis
Assessment of male LUTS

- Health History
- Symptom assessment
- Physical examination

- Urinalysis
  - Must be used in the assessment of male LUTS

(EAU, 2015)
Assessment of male LUTS

• Health History
• Symptom assessment
• Physical examination

• Urinalysis
• Blood tests
  – PSA if diagnosis of Pca will change management
    • NCCP 2017
  – Renal profile if renal impairment is suspected, in presence of hydronephrosis or if surgery is considered
    (EAU, 2015)
Assessment of male LUTS

• Health History
• Symptom assessment
• Physical examination

• Urinalysis
• Blood tests
• Uroflowmetry
Fig. 4.8 Brian Peeling's figure to allow the patient to indicate his stream.
Uroflowmetry

*EAU recommendation (2015)*- Should be performed prior to any treatment
UROFLOWMETRY

Voided Volume: 312 (ml)  
Max Flow rate: 31 (ml/s)  
Average Flow rate: 19 (ml/s)

Voiding Time: 17 (sec)  
Flow Time: 16 (sec)  
Time to Max Flow: 8 (sec)
UROFLOWMETRY

Date: 1

Patient No:

10 ml/s per DIV

Compressed Data Format

<table>
<thead>
<tr>
<th>Voided Volume</th>
<th>232 (ml)</th>
<th>Voiding Time</th>
<th>60 (sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Flow rate</td>
<td>8 (ml/s)</td>
<td>Flow Time</td>
<td>59 (sec)</td>
</tr>
<tr>
<td>Average Flow rate</td>
<td>4 (ml/s)</td>
<td>Time to Max Flow</td>
<td>7 (sec)</td>
</tr>
<tr>
<td>Parameter</td>
<td>Value</td>
<td>Unit</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------</td>
<td>-------</td>
<td></td>
</tr>
<tr>
<td>Voided Volume</td>
<td>295</td>
<td>ml</td>
<td></td>
</tr>
<tr>
<td>Max Flow rate</td>
<td>2</td>
<td>ml/s</td>
<td></td>
</tr>
<tr>
<td>Average Flow rate</td>
<td>1</td>
<td>ml/s</td>
<td></td>
</tr>
<tr>
<td>Voiding Time</td>
<td>156</td>
<td>sec</td>
<td></td>
</tr>
<tr>
<td>Flow Time</td>
<td>153</td>
<td>sec</td>
<td></td>
</tr>
<tr>
<td>Time to Max Flow</td>
<td>31</td>
<td>sec</td>
<td></td>
</tr>
</tbody>
</table>
Assessment of male LUTS

- Health History
- Symptom assessment
- Physical examination

- Urinalysis
- Blood tests
- Uroflowmetry
- Residual urine measurement

*EAU recommendation (2015)*

– PVR measurement should be routine for assessment of male LUTS
Assessment of male LUTS

• Health History
• Symptom assessment
• Physical examination

• Urinalysis
• Blood tests
• Uroflowmetry
• Residual urine measurement

• Urodynamic studies
• Ultrasound
• Cystoscopy
Treatment

• Conservative management (Watchful waiting)
• Drug treatment
• Surgery

  – Patient evaluation
  – Ability of treatment to change findings
  – Treatment preference of patient
Conservative management

Suitable for patients with mild symptoms and little associated bother

• Life style changes
  – Limit fluid intake before travelling or bedtime

• Provide assistance
  – Access to toilet / mobility / dexterity

• Fluid intake – Caffeine / Alcohol

• Double void technique / bladder retraining

• Management of constipation

• Review medication

• Education/Reassurance/ periodic monitoring
Drug treatment

- $\alpha_1$ Adrenoceptor antagonist
- 5α Reductase inhibitors
- Muscarinic receptor antagonists
- Beta-3 agonists
- Phosphodiesterase 5 inhibitors
- Plant extracts: Phytotherapy
- Combination therapies
Development of Pathway for nurse led male LUTS assessment at Letterkenny University Hospital
Male LUTS pathway
Male LUTS pathway

GP ➔ OPD ➔ Uroflow ➔ OPD
Male LUTS pathway

GP → OPD → Uroflow → OPD

18m → 3m → 2m
Male LUTS pathway

1. GP → OPD
2. 18m
3. OPD → Uroflow
4. 3m
5. Uroflow → OPD
6. 2m

- Nurse led assessment + Uroflow

7. GP → OPD
Male LUTS pathway

1. GP → OPD (18m)
2. OPD → Uroflow (3m)
3. Uroflow → OPD (2m)
4. GP → Nurse led assessment +Uroflow (3m)
5. Nurse led assessment +Uroflow → OPD (2m)
Male LUTS pathway

18m
GP → OPD

3m
OPD → Uroflow

2m
Uroflow → OPD

3m
GP → OPD

18m
Nurse led assessment + Uroflow

2m
OPD → OPD

Advanced Nurse led assessment
Male LUTS pathway

GP → OPD

18m

OPD → Uroflow

3m

Uroflow → OPD

2m

OPD → OPD

3m

GP

Nurse led assessment +Uroflow

2m
Male LUTS pathway

1. GP
2. OPD
3. Uroflow
4. OPD
5. Nurse led assessment + Uroflow
6. OPD
7. Advanced Nurse led assessment

18m, 3m, 2m
Male LUTS pathway

1. GP
2. OPD
3. Uroflow
4. OPD
5. GP
6. OPD
7. Nurse led assessment + Uroflow
8. OPD
9. GP
10. Advanced Nurse led assessment

Timelines:
- 18m
- 3m
- 2m
- 3m
- 2m
- 3m
OPD Urology schedule @ LUH

• Average clinic = 50 patients
  – 20 new GP referrals
  – 10 recall appointments
  – 10 LUTS patients
  – 10 Prostate cancer reviews
• Average clinic = 50 patients
  – 20 new GP referrals
  – 10 recall appointments
  – 10 LUTS patients
  – 10 Prostate cancer reviews

• LUTS patients removed to nurse led clinic
  = 20% increase in OPD capacity
UAC Referral pathway

- Total Referrals: 439 (66%)
- GP Referrals: 167 (25%)
- Team Referrals: 63 (9%)
- Galway Referrals: 0
- Sligo Referrals: 0
Thank you