Hang on, help is on the way!
Management of the overactive bladder

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Overactive Bladder

• Definition
• Epidemiology
• Neural control of the bladder
• Case study and interactive step-by-step discussion of investigation and management
Definition

• Symptom complex of:
  • urgency, a sudden compelling desire to void that cannot be deferred
  • urinary frequency
  • nocturia
  • may or may not be associated with incontinence

• Broadly classified
  • Idiopathic
  • Neurogenic – CVA, Parkinson’s disease, multiple sclerosis, spinal cord injury
- Holds 300-500 cc
- Empties < 8 times per day
- Holds at night
- After gradual filling, urge is felt

- Empties > 8 times per day
- Empties > 2 times per night
- Has urgency
Epidemiology

• Urinary incontinence of all types community-based prevalence of 25%
• Overactive bladder increasing prevalence as women age; community-based prevalence 12%
Storage reflexes

Bladder distension:
- stimulates sympathetic outflow via hypogastric nerve
- stimulates pudendal outflow

Hypogastric nerve
- contracts internal urethral sphincter and urethral smooth muscle (guarding reflex)
- inhibits detrusor muscle contraction

Pudendal nerve
- contracts external urethral sphincter (guarding reflex)
Voiding reflexes

Bladder contraction:
- stimulates parasympathetic outflow via pelvic nerve (voiding reflex)
- inhibits sympathetic outflow to detrusor, internal urethral sphincter and urethra
- inhibits pudendal outflow to urethral outlet

Pelvic nerve
- contracts detrusor muscle

Pudendal nerve
- inhibits external sphincter contraction
Susie H 58 yo P2

- Longstanding OAB
  - D 2 hourly N 3-4
  - Daily leak using 1-2 menstrual pads/day
- Recurrent stress incontinence cough/sneeze, 1-2 times/week
- Feels empty
- No history of UTI, haematuria
- Fluid intake water 5, no caffeine
- No prolapse, bowel dysfunction, not sexually active
- 5 years prior - Anterior and posterior vaginal repair, trans-obturator mid-urethral sling
• PMB
• PAP nad
• Meds – lipitor, micardis, nexium, cymbalta
• Nonsmoker
• NKDA

• O/E: BMI 37
• Normal cervix
• No SUI, no prolapse
• No mesh exposure
• Poor pelvic floor muscle strength
What initial investigations and management would you suggest in this patient?
Investigations

• MSU – no growth

• Post-void residual – renal ultrasound PVR 40ml
Initial management

- Advice on correct incontinence products; vulval skin health
- Fluid management
- Bladder training with pelvic physio
- Information sheet – UGSA, IUGA
<table>
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<tr>
<th>Generic name</th>
<th>Dose</th>
<th>Mechanism of action</th>
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<tbody>
<tr>
<td>Oxybutynin 5 mg</td>
<td>2.5 to 5 mg three times daily</td>
<td>Nonselective muscarinic receptor antagonist</td>
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<tr>
<td>Ditropan</td>
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<tr>
<td>Oxybutynin Oxytrol 3.9 mg/day patch</td>
<td>One patch twice weekly</td>
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<td>Discus your first choice and why?</td>
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<tr>
<td>Solifenacin 5 or 10 mg</td>
<td>5 or 10 mg daily</td>
<td>Selective M3 receptor antagonist</td>
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<td>Vesicare</td>
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<td>Darifenacin 7.5 or 15 mg</td>
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<td>Enablex</td>
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<tr>
<td>Mirabegron 25 or 50 mg</td>
<td>25 or 50 mg daily</td>
<td>Beta-3 adrenergic receptor agonist</td>
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<td>Betmiga</td>
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- Trial of oxytrol (transdermal oxybutynin)
- Pelvic US – 8.5mm endometrial thickness, prominent vessel, normal ovaries

- Hysteroscopy D+C – simple hyperplasia without atypia

- Underwent Robotic total laparoscopic hysterectomy/bilateral salpingo-oophorectomy
• Represented 18/12 following initial visit
• Had some success with oxytrol but no longer effective
• Recent MSU no growth
• Complaining of dark PV bleeding/discharge
• No change in medications, normal renal function

• O/E
• PV – small sling mesh exposure
Next step for her OAB?

What would you/do you advise about the sling mesh exposure?
Further management

• Ovestin vaginal cream
• Try Mirabegron 25mg daily

• Booked for urodynamics and cystoscopy
  • Repeat diary
  • Come off Mirabegron 1 week prior to UDS
A woman diagnosed with overactive bladder presents for management

Patient has uncomplicated OAB

First-line management

Lifestyle/behavioural modification:
- fluid management
- bladder retraining
- pelvic floor muscle training
- education
- incontinence products

If improvement, continue lifestyle and behavioural modification

If no improvement, trial medication for 4 to 8 weeks:
- anticholinergics, or
- beta-3 adrenergic agonist if anticholinergics contraindicated or not tolerated

If improvement, continue medication

If no improvement, trial different medication for 4 to 8 weeks

If improvement, continue medication

If no improvement, refer for further investigation and management

Patient has recurrent UTIs

Refer for further investigation and management

Patient has haematuria
**FINDINGS**
Diary D=9 N=2
volumes 50-300ml
UUI 8/d - often urgency and leakage when starts moving to toilet
Intake - 1.35L

MBS 11917, 36812

**TECHNIQUE**

Uroflow:
Voided volume 48 ml
Maximum flow rate 10 ml/sec
Postvoid residual volume 5 ml

Cystometry:
First sensation 78 ml
Urgency 211 ml
Maximum capacity 328 ml
Detrusor contraction at no discrete detrusor contraction but slow steady rise in Pdet to 36cm H2O at capacity; no leak

Voiding:
Voided volume 320 ml
Maximum flow rate 24 ml/sec
Maximum detrusor pressure >48 cm H2O
Postvoid residual 5 ml

Urethral function:

LPP (250ml) 33 cm H2O

Urodynamic diagnosis:
Low compliance, reduced capacity 320ml, no DO
USI LPP 33 cm H2O
Voiding - good voided volume with low PVR but valsalva voiding

Cystoscopy:
LA gel, 70 deg scope
2 UO jets, moderate trabeculations noted

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Low compliance, reduced capacity

Low LPP – low urethral closure
• Over the next 3 months
  • Mirabegron 50mg daily
  • Enablex 15mg daily
  • Mirabegron 50mg/Enablex 15mg

• Concerned about anti-muscarinics and effect on cognition
Key points:

• health-care providers fully understand the additive effects of anticholinergic drugs and their potential for harm with respect to cognitive function, dementia

• lack of longitudinal studies that provide meaningful information on the effects of long-term anticholinergic drug use on cognitive function and increased risk of incident dementia and those that do exist have methodological shortcomings or limited data.

• benefits of the use of anticholinergic medications should not be underestimated and health-care professionals should not be deterred from prescribing them as long as it is done carefully and appropriately.
If improvement, continue medication

If no improvement, refer for further investigation and management

Management of refractory OAB

- Botulinum toxin type A
- Percutaneous tibial nerve stimulation
- Sacral neuromodulation
Botulinum toxin A

• Reduces urgency and incontinence episodes
• Higher dry rates cf antimuscarinics (27% vs 13%)
• Voiding dysfunction
• Effect starts 1-2 weeks after injection, lasts for 6-9 months
Percutaneous tibial nerve stimulation (PTNS)

• Initial treatment phase consists of 12 once-weekly 30-minute sessions, followed by monthly maintenance treatments
• MBS-listed since October 2018
• RCT of PTNS versus sham therapy
  • moderate to marked improvement in bladder symptoms was seen in 54.5% of patients in the PTNS group compared with 20.9% in the sham group (p<0.001)
Sacral neuromodulation

• TGA-approved for patients with urge incontinence, urgency/frequency, non-obstructive urinary retention and faecal incontinence

• Initial test phase with placement in the S3 foramen of an electrode connected to a portable external pulse generator (stimulator), followed by the subcutaneous implantation of the pulse generator

• Dry rates of 56%, with a 90% or greater improvement in leakage episodes and pad usage in 75% and 85% of subjects respectively at 6 months
• Over the last 3 years
  • 5 Botox injections
  • Intervals 5-10 months
  • Last injection awake under local anaesthetic
• Continence Foundation of Australia  
  www.continence.org.au

• Continence Aids Payment Scheme (CAPS), Australian Government Department of Human Services  

• State and Territory continence aids funding schemes  

• State-wide Equipment Program (SWEP) – continence aids (Victoria)  
  http://swep.bhs.org.au/continence-aids

• International Urogynecological Association (IUGA), patient information leaflets  
  www.iuga.org/?page=patientinfo

• UroGynaecological Society of Australasia  
  www.ugsa.org.au
• Overactive bladder is common in female population
• GPs are ideally placed to provide education, perform initial investigations and institute behavioural and medical management
• Refer if complicated OAB
  • Prior incontinence/pelvic surgery
  • Concomitant prolapse
  • History or haematuria or recurrent UTI
  • Failed initial conservative management