Urinary Incontinence: an overview!!

Neil Harris

Consultant Urological Surgeon, Leeds
1. Epidemiology of pelvic floor dysfunction
   – Urinary incontinence
     – Bowel dysfunction
     – Sexual dysfunction

2. Treatment options & care pathways

3. Questions!!
Females: spectrum of continence disorders

- Urgency
- Frequency
- Nocturia

SUI

Mixed (UUI+SUI)

Overactive Bladder

- Urgency
- Frequency
- Nocturia

UUI
Incontinence: other causes
Urinary Incontinence

• Defn: Involuntary loss of urine

• Wide range of aetiology
• Association with pelvic floor dysfunction
• Wide variety of treatment options
• Significant unmet need
# Urinary incontinence: classification

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stress</td>
<td>Leakage with physical exertion or on sneezing or coughing</td>
</tr>
<tr>
<td>Urge</td>
<td>Leakage with a strong and urgent desire to void</td>
</tr>
<tr>
<td>Mixed</td>
<td>Combination of stress and urge</td>
</tr>
</tbody>
</table>
Prevalence of OAB in Europe

- European population-based study of 16,776 males/females aged >40 years:
  - 17% prevalence of OAB
  - estimated 5.15 million sufferers in the UK
  - equates to approx. 50 000 in average “one million city!”

1. Milsom I et al. BJU International 2001;87:760-766
Prevalence of OAB in different age groups

1. Adapted from Milsom I et al. BJU International 2001;87:760-766
Impact of OAB on quality of life is greater than that of type 2 diabetes

SUI: Huge unmet need!

Vandoninck V BJU Int 2004

- 46% women incontinent
  - 12% severe
  - QoL significantly compromised
- 28 – 31% consulted a physician
- Similar results from UK study
- Large unmet need in community!
Incontinence: under-reported

• Less than half with bladder control problems report it to their health care provider
  
  WHY

  – Embarrassment
  – Low expectation for therapy
  – “Normal” part of aging
  – Availability of absorbent products/pads
Urinary incontinence: QoL issues

• Role limitation:
  – Toilet mapping
  – Avoidance of exercise/sex
  – Clothing choice

• Psychological aspects:
  – Fear of leaking / odour
  – Anxiety / depression
  – Loss of self-respect
  – Denial
Stress urinary incontinence: prevalence

48% women of varying age groups suffer from SUI\(^1\)
Mean of 11 studies in 11,549 women aged 18 to >60 yrs

Urge incontinence
Is the complaint of involuntary leakage accompanied by or immediately preceded by urgency\(^2\)

Stress incontinence
Is the complaint of involuntary leakage on effort or exertion, or on sneezing or coughing\(^2\)

Stress Incontinence: aetiology

Predispose
Gender
Race
Neurological
Muscular
Anatomical
Collagen
Family

Induce
Childbirth
Hysterectomy
Vaginal surgery
Radical pelvic surgery
Radiation
Injury

Promote
Obesity
Lung disease
Smoking
Menopause
Constipation
Recreation
Occupation
Medications
Infection

Decompensate
Aging / oestrogen
Dementia
Debility
Disease
Environment
Medications

Diagnosis & Treatment
Diagnosis of Overactive Bladder

• Most cases of overactive bladder can be diagnosed based on:
  – patient history, symptom assessment
  – physical examination
  – urinalysis

• Initiation of non-invasive treatment does not require an extensive workup
Physical Examination

- Rule out possible causes of LUTS
  - Oestrogen deficiency / Atrophic vaginitis
  - Pelvic floor dysfunction
    - Pelvic organ prolapse
  - Exclude other serious pathologic conditions

**Signs of Hypoestrogenation**
- Agglutination of labia minora
- Prominent caruncle

**Pelvic organ prolapse**
- compartment
- grade
- symptoms
Incontinence: treatment algorithm

**Urge incontinence**
- Behavioural changes
- Physio
- Drugs
  - Minimally invasive surgery
  - Complex surgery

**Stress incontinence**
- Behavioural changes
- Physio
- Drugs
  - Minimally invasive surgery
  - Complex surgery
Treatment pathway for urinary incontinence in women, based on NICE guidelines

Lifestyle interventions

Assess and categorise

Refer

Medication

PFE

Bladder training

Urodynamics (+ other investigations)

TVT/TOT/slings

BOTOX/SNS/cystoplasty

Assessment

Conservative management
(including pelvic floor muscle training, bladder training, antimuscarinic treatment)

Surgical management
Non-pharmacological therapy: stress & urge incontinence

• Lifestyle changes
  – Caffeine / alcohol
  – Fluid management
• Bladder re-training
• Pelvic floor physio

(all have evidence base)
Pharmacologic Therapy for the Treatment of OAB

• Antimuscarinic agents are the mainstay for treating OAB

• OAB symptoms relieved by
  – inhibition of involuntary bladder contractions
  – increased bladder capacity

• Treatment can be limited by side effects such as dry mouth, GI effects (eg, constipation), and CNS effects
Muscarinic Receptor Distribution

- Dizziness
- Somnolence
- Impaired memory and cognition

CNS

- Iris/ciliary body: Blurred vision
- Lacrimal gland: Dry eyes
- Salivary glands: Dry mouth
- Heart: Tachycardia
- Stomach and esophagus: Dyspepsia
- Colon: Constipation
- Bladder (detrusor muscle)

Anticholinergics: efficacy

solifenacin

tolterodine
Antimuscarinics: mainstay of treatment of OAB

- solifenacin (Vesicare®)
- oxybutynin (Cystrin®, Ditropan®, Kentera®, Lyrinel XL®)
- propiverine (Detrunorm®, Detrunorm®XL)
- tolterodine (Detrusitol®, Detrusitol XL®)
- trospium (Regurin®)
- darifenacin (Emselex®)
- fesoterodine (Toviaz®)
Refractory incontinence

• At least a third of patients
  – failed lifestyle/physio/drugs
• Need more complex functional evaluation
  – urodynamics
• Treatment more complicated / expensive
  – invasiveness & morbidity
Failure of conservative Rx - *is surgery indicated?*

- Effect on daily life
- What are precise goals / expectations
  - Improvement *or* cure
- Have other treatments really failed
  - PFE, weight loss, cough, bladder drill, medication
- Counsellingled appropriately
  - Accept more complex treatment
Botulinum Toxin

- Produced by *Clostridium Botulinum*
- Inhibits release of efferent and afferent neurotransmitters
- Used in 1980s (ophthalmology)
- Wide range of applications in urology
  - Detrusor Overactivity (IDO, NDO)
  - “DSD”
  - Pain syndromes / PBS
Sacral neuromodulation

- Increasing indications and usage
- Mechanism not fully understood
  - alteration of afferent and efferent reflexes
- Now considered as first line in refractory DO
  - NICE
- Neurogenic and non-neurogenic voiding dysfunction / pain
- Very expensive
- Requires motivation / technical ability
- “probably the best option”
Major surgery

- Rarely indicated
  - neurogenic / poor bladder compliance
- Ileocystoplasty / detrusor myomectomy/
  urinary diversion
- Major surgery
  - initial morbidity
  - long term
- No better than BOTOX / SNS
Ileocystoplasty “CLAM”
Refractory stress incontinence

- Half of all patients
- Usually minimally invasive surgery
- Not all will desire treatment
- Few will need repeat / complex surgery
SUI: surgical management

- Drugs
- Bio-Injectables
- Midurethral slings
  - Synthetic
  - Autologous
- Colposuspension
- Artificial Sphincter

- Consider need for prolapse repair
Stress Incontinence: primary procedure

• Synthetic midurethral sling
  TVT / TOT / TVT-O etc....
  – Placed tension free
  – Seems to be as effective as colposuspension
  – Well defined, but SMALL risks
    Failure
    Erosion
    Urinary Retention
    OAB / DO
TVT success

Hilton P Am J Obstet Gynecol 2004

- n=344 randomized TVT / colpo
- TVT: 83% objectively cured @ 2 years
- Similar to colpo
Failures!

- Live with symptoms
- Further surgery BUT may be worse!
  - Redo
  - Augment with bulking agents
  - Fascial sling
  - AUS
  - Urinary Diversion
Urinary incontinence: summary

- Common
  - pelvic floor dysfunction
- Underdiagnosed
- QoL
- Treatable
  - many simple
  - some complex