Urinary incontinence and Prolapse

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Definitions:

- IUGA/ICS standardized terminology
- Urinary incontinence (symptom): complaint of involuntary loss of urine
- Frequency-increased daytime frequency
- Urgency-sudden compelling desire to void which is difficult to defer
- Urgency incontinence
- Nocturia-interruption of sleep 1 or more times because of the need to micturate
• Stress urinary incontinence - complaint of involuntary loss of urine on effort or physical exertion (e.g. sporting activities), or on sneezing or coughing

• Overactive bladder - urinary urgency, usually accompanied by frequency and nocturia, with or without urgency urinary incontinence, in the absence of urinary tract infection or other obvious pathology

• Mixed urinary incontinence - complaint of involuntary loss of urine associated with urgency and also with effort or physical exertion or on sneezing or coughing
History:

- The history taking is one of the most important points in managing patients with incontinence. It should be taken carefully with special attention to:
  - childhood history (e.g. enuresis, surgery of the urinary tract, recurrent urinary tract infections, etc)
  - medical disorders such as asthma, spinal cord trauma, diabetes, heart disease when the incontinent episodes occur
  - Medications such as diuretics, antidepressants
  - Surgical history- previous surgeries to uterus (e.g. hysterectomy), spinal cord, back or urinary tract surgery
  - Obstetric and gynaecological history- menstrual status, sexual activity, childbirth history with specific attention to duration of labour, use of assisted delivery instrument, perineal tears
Examination:

- Private
- Do not empty bladder (incontinence)
- General exam ffd by gynaecological
- Vulva and perineal exam
- Note presence of prolapse
- Cough-? Leak vs support ant vaginal wall ?leak (Bonney test)-? Sling
- Oxford grading system-0-5
- Empty bladder-do post void residual
Tests:

- F-glucose, U-MCS
- EUA, cystogram-fistula
- Pad testing
- Bladder diary-FVC
- Urodynamic studies-unclear history, previous failed surgery, planning surgery
  - uroflow
  - cystometry-pressure flow studies
Commode:
A schematic representation of urine flow over time

- Voided volume (ml)
- Maximum urine flow rate (MUFR - ml/sec) - $Q_{max}$
- Average urine flow rate (AUFR - ml/sec) - $Q_{ave}$

- Urine flow rate (ml/sec)
- Time to maximum urine flow rate (sec)
- Flow time (sec)
• Introduce catheters and fixed-supine
• Water or saline infused
• Room temperature-50-60mls/min- <20cmH20
• Filling-sitting position
• Flush bladder and rectal lines-then record
• Ask pt to cough-biphasic spike on detrusor line
• Continuous dialogue between investigator and pt
Double lumen 8 Fr

Rectal 8 Fr
- First sensation - 50% of cystometric capacity
- Normal desire to void - 75%
- Strong desire to void - 90%
- Urgency - sudden compelling desire
- Pain - abnormal during filling & voiding
Patient Data:

Patient Name
Patient ID

Date of Birth
Sex

Notes:

Referring Department
GYNAE

Examining Doctor
GYNAE

Urine tested: NAG, PH 5.0

Main Results:

P Hale used 50 ml/min. No leakage throughout the procedure.

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Uro - Uroflowmetry#1

Max Flow Rate 46.1 ml/s
Voided Volume 474 ml
Delay Time N.A. s
Voiding Time 30 s

Flow Time 25 s
Average Flow Rate 18.8 ml/s
Time to Max Flow 6 s
Residual 0
Treatment for SUI:

- Mild-PFE-6 months
- 10 contractions 3 times a day
- Electrical stimulation
- Mod-severe- BURCH colposuspension, slings
- Slings - TVT-retropubic
- TOT/TVT-O-obturator slings
- Mini slings
Epidemiology-OAB

- Chronic medical condition
- Exact prevalence-unknown and underestimated
- Affecting 16.6% US citizens; 61% elderly British women¹,²,³
- Economic impact-estimated total costs 26 billion USD
- Negative impact on: physical & psychosocial wellbeing⁴
- Skin infections, depression, sleep disturbance, falls & fractures

².Brocklehurst J, Geriatrics, 1972
Theories

- CNS mechanism
- Myogenic
- Myofibroblast activity
- Urothelial afferent function
- Lack of defined relationship between pathophysiological mechanism and perceived sensation of urgency

- Urgency
  - Nocturia
  - Increased frequency in
  - Reduced voided volume
  - Reduced intervoid interval
  - Incontinence
Assessing OAB

- Validated self-administered questionnaires
- Validity (does the instrument measure what it intend to measure)
- Reliability (is the instrument reproducible in its measurement)
- Responsiveness (ability to detect a Rx effect or other clinically meaningful change)

1. Barber MD, Int Urogynecol J Pelvic Floor Dysfunct 2007
Questionnaires

- OAB-q evaluates symptom bother with 8 questions & impact on health related QoL with 28 questions\(^1\)
- OBSS-(OAB symptom score)-7 item Q
  - daytime frequency, nocturia, urgency and urgency incontinence\(^2\)
- POSQ-(Primary OAB symptom Q)-5 item Q\(^3\)
- Newly urgency specific scales developed\(^4\)

1. Coyne KS, Qual Life Res, 2005
2. Homma Y, Urology 2006
3. Matza LS, Neurourol Urodyn 2005
Management

- First line Rx
  - Lifestyle modification
  - Behavioural modification
  - Pelvic Floor Muscle Training
  - Bladder training
- Anticholinergics
- Intravesical therapy
- Neuromodulation
Lifestyle modification:

- Fluid reduction
- Avoid water containing fruits
- Last drink 4 hrs before bedtime
- Empty bladder before bed
- Empty bladder before leaving house
- Stop smoking
- Weight reduction
Bladder training

- Aim is to increase voided volumes
- Based on a frequency volume chart
- Supplemented with pelvic floor muscle exercises
Antimuscarinics
DARIFENACIN
SOLIFENACIN
OXYBUTYNIN
TOLTERODINE
PROPIVERINE
TROSPUIUM
FESOTERODINE
Review-Neuro-urology

A Systematic Review and Meta-Analysis of Randomized Controlled Trials with Antimuscarinic Drugs for Overactive Bladder

Giacomo Novara, Antonio Galfano, Silvia Secco, Caolina D’Elia, Stefano Cavalleri, Vincenzo Ficarra, Walter Artibani
Present Systematic Review

- 50 RCT’s and 3 pooled analyses
- Efficacy, safety and different doses, formulations, routes of administration
- Performed in August 2007-Medline, Embase and Web of Science
- Quality of retrieved RCT’s were graded-Jadad score
Findings.....

- IR - Tolterodine > Oxybutynin
- ER - Tolterodine = Oxybutynin
- Solifenacin is noninferior to ER Tolterodine, similar rates of AE,
  Constipation > Solifenacin
- Fesoterodine > ER Tolterodine
- Transdermal route-no added advantage
Recommendation:

- Oxybutynin ER
- Tolterodine ER-4mg
- Solifenacin-5-10mg
- Darifenacin-15mg
- Fesoterodine-4mg

BUT

- Short term therapy-12 weeks/ 52 weeks
- Data on efficacy –bladder diaries
- Evidence derived from pharmaceutical companies
Intravesical therapy

- Intravesical oxybutynin-local anaesthetic effect
  Increases bladder capacity and improves symptoms

- Botox-A-selectively blocks Ach

- Neurogenic DO
  Reduction in UUI and allows to retain more urine
  6-9 months

??? Number and site of injections and optimal dose
Neuromodulation

- Intractable OAB
- Sacral nerve stim and PTNS
- Electrical impulses to sacral nerve
- Invasive
- Cost
- 5-10 years
Surgery

- Augmentation cystoplasty
- Detrusor myomectomy
- Bladder diversion
- Operative complications
- 10% require ISC
Pelvic organ prolapse:
Examination:

- Empty bladder
- Left lateral or lithotomy position
- When the patient is asked to cough or Valsalva, the perineum should show no downward movement
- Grade degree of prolapse-POP-Q
- Oxford grading for PF muscle strength
- Hymen – point of reference
- Rectal examination-sphincter tone and strength
POP-Q:

- **Stage 0:** No prolapse is demonstrated.
- **Stage I:** Most distal portion of the prolapse is more than 1cm above the level of the hymen.
- **Stage II:** Most distal portion of the prolapse is 1 cm or less proximal to or distal to the plane of the hymen.
- **Stage III:** The most distal portion of the prolapse is more than 1cm below the plane of the hymen.
- **Stage IV:** Complete eversion of the total length of the lower genital tract is demonstrated.
Treatment:
Operation:

- Cystocele-anterior repair
- Rectocele-posterior repair
- Uterine prolapse- vaginal hysterectomy and Mc Calls - Richters procedure
- Vault prolapse-Sacrocolpopexy