

Urinary incontinence

Assessment

- History
- Examination:
 - Prolapse
 - Anterior: Stress incontinence/Voiding difficulty
 - Posterior: Faecal incontinence/Constipation
- Investigation: urodynamics

STRESS URINARY INCONTINENCE

- Conservative management
 - Lifestyle changes
 - Bladder retraining / timed voiding
 - Pelvic floor exercises [vs no treatment – better for up to 6 months, minimum 36 contractions/day]. No benefit of cones/biofeedback/electrical stimulation
- Medication
 - Duloxetine: Small benefit: 3% improvement in subjective cure (improved QOL). 50% reduction in number of incontinent episodes. No advantage in combining with pelvic floor exercises. 30% will develop nausea
 - Oestrogens: No benefit
- Surgical
 - Consider wishes/ages/additional procedures
 - Supportive: **Retropubic**: Burch colposuspension/Slings (TVT). Both equally effective – 70% at 5 years
 - Occlusive: Bulking agents [periurethral injections]: No proof it helps in twelve trials

URGE URINARY INCONTINENCE

- Behaviour modification
- Dietary changes / weight loss
- Advice on fluid management
- Reduction of caffeine and alcohol intake
- Drugs:
 - 5 less toilet trips/week. Four less leakages/week
 - High withdrawal rates
 - 1 in 3 report dry mouth
- Surgical:
 - Self catheterisation
 - Intrinsically botulinum toxin
 - 70% cure for 6-9 months
 - 4-30% will required to self-catheterize after
 - Decreasing effect with time
 - Percutaneous tibial nerve stimulation
 - 30 minute sessions over 12 weeks
 - Objective success in 47% to 56% with 50% reduce in leakage episodes
 - Sacral nerve neuromodulation
 - 50% cure and 25% improved
 - Cost £8500 per device
 - Wire migration in 10-20%

URINARY STONES

Most ureteric stones pass without intervention

Peak incident 30s-40s (previously 40s-50s)

1.6 male:1 female risk

Affects 1 in 10 in UK

Recurrent rate: 10% at 1 yr, 35% at 3yrs 50% in 5 years.

Epidemiology Factors

- Age
- Gender
- Season

- Climate
- Fluid intake
- Stress
- Occupation
- Affluence
- Diet
- Metabolic
- Genetic disorder

Balance between

- Increased supersaturation
- Decreased inhibitors
- Increase promoters

Types of Urinary stone

- 70% Idiopathic
 - Ca Oxalate [monohydrate/dihydrate]
- 25% Infective
 - Urease producing organisms
 - Triple phosphate stone
 - Urine-alkaline
 - Recurrent UTI
- 5% Metabolic
 - Idiopathic: Unexplained hypercalcuria
 - 10% renal- impaired tubular reabsorption
 - 60% absorptive – intestinal
 - Hypercalcaemia
 - Primary PTH
 - Immobility
 - Vit D
 - Malignancy
 - Renal tubular Syn
 - RTA type I
 - Alkaline Urine
 - Raised urinary phosphate
 - Low citrate
 - Cysteine
 - Autosomal recessive
 - Defect of Cysteine, Ornoth, Arg + Lysine
 - Rx-Na Cyanide, Nitroprusside test
 - Uric acid (5-10%):
 - Primary: Enzyme deficiency
 - Secondary: Gout/Malignancy/Iliostomy
 - Hyperoxaluria:
 - Autosomal recessive
 - Type 1 [alanine deficiency]
 - Type 2 [deficiency of glycerate dehydrogenase]

Medical management of urolithiasis:

- Identify risk factors for stone-formation
- Reduce supersaturation of urine with respect to the stone-forming mineral concerned
- Dietary/medical treatment

Biochemical Screening

- First time stone former
 - Biochemical stone analysis
 - Spot urine cysteine screen
 - Renal function, electrolytes, bone, PTH, vitamin D, bicarb
- Recurrent stone former
 - Biochemical stone analysis
 - Renal function, electrolytes, bone, PTH, vitamin D, bicarb, urate
 - Formal diet diary

- Spot urine pH and Cysteine screen
- 24hr urine for urine volume for calcium, oxalate, phosphate, Mg, Na, Ca, Protein, Citrate[stone inhibitor], Urate

Medical management

Risk factor	Type	Dietary Change	Pharmacological
Low urine Vol	All	Increase fluid intake	
Hypercalciuria	CaOx + Phosph	Decrease Ca, Na, animal protein Increase fibre	Thiazides, Citrate
Hyperoxaluria	CaOx	Decrease oxalate	Vit B6
High Urate	CaOx, Urate	Decrease purine	Allopurinol
Low pH		Decrease animal protein	Citrate
Low Citrate	Ca ox		Citrate

Dietary advice for Stone formers

- Maintain adequate fluid intake
- Avoid red meat
- Reduce oxalate intake (chocolate, cheese, red wine, rhubarb, spinach, tea, peanuts, okra)
- Reduce table salt intake
- Reduce daily calcium intake
- Avoid vitamin C and vitamin D supplement
- Drink orange/grapefruit juice in preference to cranberry/lemon juice

Acute renal colic

Associated N+V, fever haematuria

DDx:

- Pyelonephritis
- Appendicitis
- Diverticulitis
- Ruptured ovarian cyst
- Ruptured AAA
- Sickle cell crisis, malaria, HIV

Rx:

- Analgesia: Diclofenac 100mg PR + pethidine and antiemetic
- Tamsulosin 400 microgram od [increase stone passage rate]
- Emergency stenting +/- endoscopic laser ureterolithotomy/lithotripsy

Imaging

- KUB
- Renal ultrasound
- IVU (confirm ureteric stone/degree of obstruction). Risks metformin/
- **CT KUB [most commonly used now]**
- DMSA [cortical imaging] /MAG-3 Renogram [transit imaging]

Asymptomatic KIDNEY stones

- 77% untreated with lead to complications.
- 25% will require surgery due to development of severe pain/kidney obstruction

Treatment

- Drugs [alpha blockers/Ca channel blockers]
- Extracorporeal shock wave lithotripsy [depends on stone density as determined by non-contrast CT KUB. If very hard stone won't work]
- Surgical intervention [ureteroscopy/lithotomy/nephrolithotomy]