Module 4: Treatment of Chronic Urinary Incontinence

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Chapter 1 - Introduction

The treatment of urinary incontinence is dependent on the underlying etiology. After reversible causes of UI have been addressed the treatment of chronic causes includes lifestyle changes, behavioral and other non-pharmacologic approaches, pharmacologic and surgical interventions.

The following sections will describe our approach to urge and stress incontinence separately, fully recognizing that in real life practice many patients present with both symptoms. In case of mixed incontinence, the predominant symptom of the mixed condition is targeted first.

In all patients' the first steps should include adequate access to toileting, in those with problems with manual dexterity use of adaptive clothing (such as Velcro fasteners, wrap-around skirts, or elastic waistbands) and measures to improve mobility in patients with impaired mobility. Lifestyle changes such as limiting excessive amounts of fluid intake and avoiding caffeinated or carbonated beverages, encouraging weight loss in overweight patients and smoking cessation are all important measures in all patients. If diuretics are essential, avoid their night time administration.

Chapter 2 -Urge Incontinence

Behavioral therapy such as bladder training is an important part of treating urge incontinence. Bladder training requires adequate cognitive and physical function plus motivation. Patients are instructed to void at scheduled intervals regardless of the need to void. One approach is to instruct patients to void every two hours (shorter intervals if symptoms more frequent) and if no incontinence after 2-3 days increase the voiding intervals by 30 to 60 minutes to a goal of voiding every 3 to 4 hours. This strategy is effective but requires motivated and cognitively intact patients. A bladder suppression technique can also be used to delay time of voiding by asking the patient to contract their pelvic muscles 5 times in rapid succession and distract or focus on something unrelated while walking to a restroom.

Biofeedback in selected patients may also be used to treat urge symptoms. Biofeedback requires continued motivation and practice by the patient and a skilled therapist. Both behavioral therapy and biofeedback can be used with pharmacologic agents as level 1 evidence suggests that they complement each other.

Pharmacologic interventions are used to inhibit detrusor contractions and increase bladder capacity. These agents work by their anticholinergic effect by competitively inhibiting the muscarinic receptors. This group of medications has been shown to be effective in reducing symptoms and increasing quality of life but their effect size is modest with 20% or less achieving continence compared to placebo. Medication adherence is low with half of women stopping medication within a year of starting. The rate of bothersome side effects is high; the most common is dry mouth. The use of anticholinergic agents should be used with caution in patients with cognitive impairment because they may worsen cognition. Potential drug interactions are a concern if used with antihistamines or cytochrome inhibitors which may result in arrhythmias in older people. Caution is also advised in patients at risk of impaired bladder emptying since the addition of an antimuscarinic agent could precipitate urinary retention.

In patients refractory to these therapies, a referral to a urologist or urogynecologist specializing in urinary incontinence can be considered for more intricate therapies such as:

- percutaneous tibial nerve stimulation
- Interstim™ implanted stimulation in the lower back
- intravesical Botulinum toxin (Botox)
- Bladder augmentation
- Urinary diversion

Chapter 3 - Stress Incontinence

For patients with stress incontinence a number of non-surgical interventions are useful.
Pelvic floor muscle training (e.g. Kegel exercises) can be effective in reducing incontinent episodes in patients with stress incontinence. Directed pelvic floor exercises with a physical therapist can enhance the effectiveness of pelvic floor control and encourage adherence. A common regimen initially includes performing slow velocity contractions, sustained for 6-8 seconds in sets of 8-12 contractions, 3 to 4 times a day for several weeks followed by a maintenance program. Pelvic floor muscle training combined with bladder training is also a useful strategy. Biofeedback and devices such as intravaginal electrical stimulation or pessaries may be useful in selected patients with pelvic organ prolapse. The latter requires sufficient manual agility to care for them which may limit their use in older patients or those with impaired dexterity.

Injected periurethral bulking agents have been used in women with sphincter deficiency and a well-supported urethra although efficacy and durability have been variable.

There are no FDA approved drugs for treating stress incontinence although some studies suggest a benefit using alpha agonists to increase outlet resistance.

Surgery can be particularly effective in patients with stress incontinence secondary to urethral hypermobility and have not had a satisfactory response to behavioral or pelvic floor muscle training exercises.
These procedures include

- Sling (autologous, cadaveric, synthetic)
- Bladder neck suspension (Burch urethropexy, vaginal suspension)

To limit morbidity, vaginal surgical approaches as well as injectable agents are favored in patients with advanced age.

Chapter 4 – Overflow Incontinence

Overflow incontinence secondary to obstruction as confirmed by urologic testing usually will require surgical intervention such as in men with obstruction from benign prostate hypertrophy a transurethral resection of the prostate is often performed.

In all patients with overflow incontinence it is important review all prescribed and over- the- counter medications which may impair detrusor contractility such as anticholinergic and alpha adrenergic agonists. For example cold and sinus medications may contain both an antihistamine with anticholinergic properties impairing detrusor contractility and a decongestant with alpha agonists properties which tighten the sphincter and bladder neck. Therefore an older man with baseline benign prostatic hypertrophy taking this combination of drugs may develop in urinary retention and overflow incontinence. The patient may be incorrectly diagnosed as having retention related to prostatic obstruction. The real culprit in this situation is that medications precipitated urinary retention. Here, the treatment would not be a transurethral prostatic resection but instead, the offending medications should be stopped and an indwelling catheter placed to decompress the bladder. The catheter should be removed and bladder emptying reassessed in a few days to see if bladder function has improved.

Other situations where surgery may not be the initial recommended approach is in a medically unstable patient with obstruction from prostate enlargement. Here alpha blockers may be a useful temporizing measure to increase urine outflow until a surgical procedure can be performed at a later date.

Another option in frail or medically high risk patients with obstruction is placement of a suprapubic catheter to allow satisfactory urinary drainage. An alternative option is to consider a channel transurethral resection of the prostate (TURP) which can be done with laser to limit bleeding.

In patients in whom overflow results from an underactive detrusor, the medication list should once again be carefully reviewed for agents that can affect detrusor contractility such as anticholinergic agents, narcotics and calcium blockers.

There are no effective pharmacologic agents which stimulate bladder emptying . Attempts to augment voiding using the Credé or double void maneuvers may be helpful . Please see the link above for instructions on how to perform the Credé maneurver.

Typically chronic intermittent catheterization (CIC) is performed to manage patients with overflow from an underactive detrusor . If CIC is not possible because of patient inability to perform catheterization or lack caregiver support then a chronic (or suprapubic) indwelling catheter is the only option.
Indications for a chronic indwelling catheter include:

1. Urinary retention and inability to void
2. Urinary Incontinence AND
-Open sacral ulcers or perineal wounds
-Palliative care and patient preference
3. Urine output monitoring
-Such as in an ICU setting where careful monitoring of urinary output is needed and the patient is unable to collect a urine specimen
-Patient unable to collect urine
4. After general or spinal anesthesia

Chapter 5 - Functional Incontinence

As discussed before chronic urinary incontinence due to impaired cognition, mobility or environmental barriers is referred to as functional incontinence. Treatment focuses on environmental manipulations and behavioral approaches to care.

Measures to improve access to toileting should be reviewed such as use of assistive devices such as canes, walkers, wheelchairs, and devices that raise the seating level of the toilet to make toileting easier, hand rails in the bathroom or a bedside commode should be considered.

In patients with dementia other etiologies (stress, urge or overflow) should first be considered before attributing symptoms to cognitive impairment.

A number of behavioral approaches are utilized in patients with cognitive impairment. The most common approach used in patients with impaired cognition or impaired mobility is timed or scheduled voiding where patients are given a fixed voiding schedule with set intervoiding intervals. Patients are usually toileted every 2 to 4 hours. The goal is to prevent wetting episodes and requires caregiver or staff availability.

Prompted voiding is another treatment approach for patients with cognitive or physical impairment.
It is most effective in patient who can accurately report whether they are dry or wet. This can be simply tested over a few days. Patients are prompted every 1-2 hours if they need to void and if affirmative are assisted to the commode.

Habit training is another behavioral approach used in patients with cognitive impairment. The toileting interval increases or decreases depending on the observed voiding pattern or habit of the individual. Patients begin with an assigned toileting schedule, for example every two hours, then modified based on charted episodes of incontinence. The toileting schedule is then modified to fit the patients voiding pattern. (for example if Ms. L always voids two hours after lunch she would be routinely toileted an hour and a half after lunch)

External collection devices such as a condom catheter should be avoided because just like indwelling catheters they are associated with increased risk of urinary tract infection as well as cellulitis and necrosis of tissue.

Disposable absorbent garments may be used in patients with functional incontinence**.** They may be an adjunctive therapy but as a nonspecific approach they are not a simple solution. In addition they may foster dependency, skin breakdown, are expensive and pose environmental concerns