Canadian Urological Association guidelines on urinary incontinence

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Objective: *To develop the first Canadian guidelines for the management of adult urinary incontinence (UI).*
Method: *Following a mandate of the Canadian Urological Association, six Canadian urologists collaborated to produce these guidelines after having extensively reviewed existing foreign guidelines and literature from 1966 to June 2005.*
Results: *The terminology proposed by the standardization committee of the International Continence Society (ICS) is recommended. Basic evaluation must include a history, physical examination, evaluation of post void residual volume, urinalysis and voiding diary. A more detailed evaluation is recommended for complex cases or if initial management fails. As non-pharmacological treatments, devices (catheters, pessaries, etc…) play an important role in selected patients. Lifestyle adjustments are recommended to be implemented first before considering other forms of treatment. Pelvic exercises can be helpful for the mildest cases of pelvic relaxation, in motivated compliant patients. In highly selected patients neuromodulation can improve the patient's quality of life.*
Probantheline, oxybutinin and tolterodine have a proven efficacy in the treatment of UI. Imipramine and oestrogens are suggested while flavoxate has an unproven efficacy. Surgery in women is indicated when the degree of incontinence is sufficiently troublesome to the patient, the incontinence has been observed by the examiner, its causes adequately evaluated and conservative therapies have been reviewed. Primary stress urinary incontinence in the female is effectively treated by a retropubic suspension (Burch or Marshall- Marchetti-Krantz), or a pubovaginal sling procedure. Pubovaginal slings are the procedure of choice in the presence of significant intrinsic sphincteric deficiency (ISD), the absence of hypermobility, or in the treatment following a failed retropubic suspension. Peri urethral injectables are recommended first line treatment of SUI when available. In men, artificial sphincter is the treatment of choice in neurogenic and non-neurogenic SUI. In neurogenic bladders and sometimes in "non neurogenic" bladders other forms of surgeries such as bladder denervation, bladder augmentations, neurostimulation, urinary diversion can be considered as the treatment of choice for individual patients.
Conclusion: *Canadian guidelines on incontinence have been completed in 2005 reflecting the Canadian health environment. This field of UI is in constant progression and, when of proven efficacy, new medications and devices have to be included in the proposed algorithm of care.*

Key Words: guidelines, urinary incontinence

Introduction

Urinary incontinence is a wide spectrum of different conditions leading to an "involuntary loss of urine". The prevalence of incontinence in Canada is estimated at 17.3% in women and 3.4% in men.[1]

Important advances in the diagnosis, the evaluation of the impact, and the medical and surgical treatments have completely changed the medical approach of this condition in the last 20 years. For that reason the Canadian Urological Association (CUA) gave to the lead author of this report the mandate to put together an ad hoc committee to

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produce these guidelines. This field is in constant changes. Notions developed in this document reflect medical knowledge of years 2003-2004.

Until recently, urologists and some gynecologists mainly managed urinary incontinence. The introduction of improved medical therapy, and better-understood physical therapies have brought in, general practitioners, physiotherapists and specialized clinical nurses. We feel that urinary incontinence should not be treated by physiotherapists and other health professionals without an initial medical consultation. The role of urologists and gynecologist specialists remains essential in any atypical case or any case non-responding to behavioral modifications and pharmacological treatment.

The explosion of knowledge regarding urinary incontinence, the introduction of new drugs, and new surgical techniques have led to the creation of a new branch of our specialty, erroneously called "female urology", but that we feel that it should be called "incontinence medicine" since we have to also deal with pediatric and male incontinence. However, regarding the particular aspect of female urology, urologists share the management of these patients with gynecologists called urogynecologists. In order to better manage their patients urologists must closely collaborate with gynecologists interested in the field, but they should also receive a formal and adequate training in the management of women with different forms of pelvic floor dysfunction, including pain and prolapse as well as post menopausal changes and complications of pregnancy.

Methods

After having met to define each member's work to produce, the committee reviewed American Urological Association, European Urological Association and Canadian Continence Foundation guidelines as well as all pertinent literature through an extensive Medline search from 1966 to January 2005. A draft document has been circulated to the whole committee for corrections and suggestions and finalized early 2005. After publication of these guidelines in the first CUA newsletter of 2005 to give the CUA members an opportunity to comment, these guidelines have been adopted by the general assembly of the CUA in June 2005 in Ottawa.

Terminology

We suggest following the 2002 recommendations of the International Continence Society. Lower Urinary Tract Symptoms (LUTS) are divided into three groups: storage, voiding and post-micturition symptoms.

Storage symptoms

Urinary incontinence: involuntary leakage of urine;
Enuresis: involuntary loss of urine (to denote incontinence during sleep, it should always be qualified with the adjective "nocturnal");
Nocturnal enuresis: loss of urine during sleep;
Stress urinary incontinence: involuntary leakage on effort; exertion, sneezing or coughing;
Increased daytime frequency (named also pollakiuria): patient considers that he/she voids too often by day;
Urgency: a sudden compelling desire to pass urine, which is difficult to defer;
Urge urinary incontinence: involuntary leakage accompanied by or immediately preceded by urgency;
Nocturia: patient has to wake at night one or more times to void;
Night-time frequency: includes also voids that occur after the individual has gone to bed, but before he/she has gone to sleep, and voids which occur in the early morning which prevents the individual from getting back to sleep as he/she wishes;
Mixed urinary incontinence: involuntary leakage associated with urgency and also with exertion, effort, sneezing or coughing;
Continuous urinary incontinence: continuous leakage;
Other types of incontinence: may be situational (ex: during inter-course, giggle incontinence);
Bladder sensation:

- *normal:* aware of bladder filling and increasing sensation up to a strong desire to void
- *increased:* early and persistent desire to void
- *reduced:* aware of bladder filling but does not feel a definite desire to void
- *absent:* no sensation of bladder filling or desire to void

Voiding symptoms

Slow stream: individual's perception of reduced urine flow, usually compared to previous performance or in comparison to others;
Intermittent stream (= intermittency): urine flow stops and starts, on one or more occasions, during micturition;
Hesitancy: difficulty in initiating micturition resulting in a delay in the onset of voiding;
Straining: muscular effort used to either initiate, maintain or improve the urinary stream;
Credée manœuvre: supra pubic pressure used to initiate or maintain urine flow;
Terminal dribble: prolonged final part of micturition, when the flow has slowed to a trickle/dribble

Post-micturition symptoms

Feeling of incomplete emptying: self-explanatory term
Post-micturition dribble: involuntary loss of urine immediately after he/she finished passing urine (usually after leaving the toilet in men and after rising from the toilet in women)
NB: Stranguria, bladder spasm, dysuria are difficult to define and of uncertain meaning. Should not be used in relation to lower urinary tract dysfunction.
Symptom syndromes suggestive of lower urinary tract dysfunction:

Overactive bladder syndrome
Urge syndrome
Urgency

these terms are synonyms and are defined as urgency, with or without urge incontinence, usually with frequency and nocturia

LUTS suggestive of bladder outlet obstruction:
- In men complaining of voiding symptoms in the absence of infection
- In women usually thought to suggest detrusor underactivity rather than bladder outlet obstruction

Evaluation

Basic evaluation

All adult patients with a history of urinary incontinence (UI) should undergo a basic evaluation that includes a history, physical examination, evaluation of postvoid residual volume, and urinalysis.

Rationale

The purposes of the basic evaluation are to:
1) Confirm the presence of UI;
2) Identify potentially reversible and contributing factors;
3) Identify patients who should receive initial treatment without further testing and those who require further evaluation before any therapeutic interventions are attempted;
4) Develop a presumptive diagnosis, if possible.

Focused history

Medical history

- History suggesting conditions affecting the lower urinary tract:
  - pelvic organ prolapse (women)
  - possible obstruction (men)
  - urinary tract infection
  - hematuria
  - pelvic pain
  - significant post-void residual
  - atrophic vaginitis/urethritis
  - pregnancy/vaginal delivery/episiotomy
  - prostatectomy
  - radical pelvic surgery
  - pelvic irradiation
  - constipation/stool impaction
  - suspected fistula
- History suggesting increased urine production:
  - metabolic (hyperglycemia, hypercalcemia)
  - excess fluid intake
  - volume overload
  - venous insufficiency with edema
  - congestive heart failure
- History suggesting impaired ability or willingness to reach a toilet:
  - delirium
  - chronic illness, injury, or restraint that interferes with mobility
  - psychological
  - prescription and non-prescription medication use/polypharmacy (and side effects):
  - diuretics (polyuria, frequency, and urgency)
  - caffeine (aggravation or precipitation of UI)
  - anticholinergic agents (urinary retention, overflow incontinence, and impaction)
  - psychotropics
  - antidepressants (anticholinergic actions and sedation)
  - antipsychotics (anticholinergic actions, sedation, rigidity, and immobility)
  - sedatives/hypnotics/CNS depressants (sedation, delirium, immobility, and muscle relaxation)
  - narcotic analgesics (urinary retention, fecal impaction, sedation, and delirium)
  - alpha-adrenergic blockers (urethral relaxation)
  - alpha-adrenergic agonists - present in many cold and diet over-the-counter (OTC) preparations (urinary retention)
  - beta-adrenergic agonists (urinary retention)
  - calcium channel blockers (urinary retention)
  - alcohol (polyuria, frequency, urgency, sedation, delirium, and immobility)

Neurologic history

- Immobility/chronic degenerative disease
- Impaired cognition
- Other neurologic conditions

Incontinence history

- Duration and character of UI, such as stress, urge, or dribbling
- Frequency, timing, and amount of continent voids and incontinent episodes

- Precipitants of incontinence (e.g., situational antecedents, cough, certain types of exercises, surgery, injury, previous pelvic radiation therapy, trauma, new onset of diseases, and/or new medications)
- Other lower urinary tract symptoms (e.g., nocturia, dysuria, hesitancy, poor or interrupted stream, straining, hematuria, and/or suprapubic or perineal pain)
- Fluid intake pattern, including caffeine-containing or other diuretic fluids
- Previous treatments and their effects on UI
- Alterations in bowel habits or sexual function
- Use of pads, briefs, and protective devices – amount and types
- A mental status evaluation and
- Assessment of mobility, living environment (environmental barriers), and social factors, especially in elderly patient
- Goals and expectations for outcomes of treatment
- Most bothersome symptom(s) to the patient
- Impact on quality of life (includes sexual dysfunction). Only 3 QoL questionnaires are presently fully validated and can be used clinically (King's Health Q. , Incontinence Impact Q. , IQoL)
- A 4 day voiding diary

Completion of a voiding diary by the patient or caregiver may be helpful in determining severity of symptoms, the frequency, timing, and amount of voiding, fluid intake, other factors associated with UI, clues about the underlying cause of UI, and for evaluating treatment efficacy.

Assessment of risk factors

Risk factors associated with UI should be identified so attempts can be made to modify them. Risk factors for urinary incontinence include:

- immobility/chronic degenerative disease
- impaired cognition or delirium
- medications
- morbid obesity
- diuretics
- fecal impaction
- environmental barriers
- high-impact physical activities
- diabetes
- stroke
- estrogen depletion
- pelvic muscle weakness
- childhood nocturnal enuresis
- race
- pregnancy/vaginal delivery
- previous anti incontinence surgery
- previous hysterectomy

Physical examination

The physical examination should include:

- General examination for:
  - conditions such as oedema that may contribute to nocturia and nocturnal UI
  - neurologic abnormalities that may suggest multiple sclerosis, stroke, spinal cord compression, or other neurologic conditions
  - assessment of mobility, cognition, and manual dexterity related to toileting skills among frail and functionally impaired patients
- Abdominal examination for:
  - organomegaly
  - masses
  - other abnormalities
- Rectal examination for:
  - perineal sensation
  - sphincter tone (resting and active)
  - fecal impaction
  - rectal mass
  - consistency and contour of the prostate in men
- Genital examination in men for:
  - skin condition
  - abnormalities of the foreskin, glans penis, meatus and perineal skin
- Pelvic examination in women for:
  - perineal skin condition
  - genital atrophy
  - pelvic organ prolapse (cystocele, rectocele, or uterine prolapse evaluated in supine and standing position)
  - pelvic mass
  - paravaginal muscle tone
  - urethral discharge or tenderness that suggesting a urethral diverticulum, carcinoma, or inflammatory condition of the urethra
  - other abnormalities
- Direct observation of urine loss using the cough stress test

Estimation of postvoid residual (PVR) volume

Estimation of PVR volume is better done by catheterization or pelvic ultrasound. However in the screening phase of the management of a patient an evaluation by clinical examination (abdominal, vaginal) is acceptable.

Residual volume (repeat test if high residual volume) of 50 ml to 100 ml are considered "acceptable" but in any case clinical history and circumstances would have to be analyzed.

Urinalysis

Urinalysis is performed to assess for:

- hematuria (suggestive of infection, cancer, or stone)

- glucosuria (which may cause polyuria and contribute to UI symptoms)
- pyuria and bacteriuria (suggestive of infection)
- proteinuria

Blood tests, if indicated

Blood tests may indicate an increase in:

- creatinine levels in patients suspected of having obstruction, noncompliant bladders, or urinary retention
- glycemia and calcemia (for patients with polyuria)

If the basic evaluation identifies a transient cause of UI and/or provides a presumptive diagnosis, treatment should be initiated unless there is an indication for further evaluation.

Further evaluation

Rationale for further evaluation

Patients requiring further evaluation include those who meet any of the following criteria:

- Uncertain diagnosis and inability to develop a reasonable treatment plan based on the basic diagnostic evaluation (for example, when there is a lack of correlation between symptoms and clinical findings
- Failure to respond to the patient's satisfaction to modification of risk factors and/or an adequate therapeutic trial, and patient's pursuit of further therapy
- Consideration of surgical intervention, particularly if previous surgery failed or the patient is a high surgical risk
- Unexplained hematuria
- Comorbid conditions, such as:
  - incontinence associated with recurrent symptomatic UTI
  - persistent symptoms of difficult bladder emptying
  - history of previous anti-incontinence surgery or radical pelvic surgery
  - beyond hymen and symptomatic pelvic prolapse
  - prostate nodule, asymmetry, or other suspicion of prostate cancer
  - abnormal PVR urine
  - neurological condition, such as multiple sclerosis and spinal cord lesions or injury.

Further evaluation may not be appropriate for patients whose medical condition precludes treatment or who do not desire treatment.

Specialized tests

Specialized diagnostic tests must be carefully selected on the basis of the question to be answered. When performing urodynamic studies, the health care provider should attempt to reproduce the patient's symptoms.

Urodynamic testing

- Cystometrogram
- Detrusor Leak Point Pressure
- Pelvic floor EMG
- Urethral function testing (Urethral Pressure Profile – UPP- or Valsalva Leak Point Pressure- VLPP-)
- Pressure Flow Study (PFS)
- Flowmetry

Note: Videourodynamics are done on a case by case basis when the diagnosis remains unclear or visualization of anatomy is required. It is however highly suggested in any case of neurogenic bladder dysfunction.

Other tests

- Pad test
- Electrophysiologic testing (evoked potentials, conduction speed etc.)
- Voiding Cystogram (VCUG)
- Pelvic ultrasounds (supra pubic or transvaginal)
- Pelvic MRI

Non-pharmacological management

In general, many patients have incorporated lifestyle changes to minimize wetting before seeking medical attention. Lifestyle adjustments must be reviewed with patients, highlighting areas that need reinforcement.

Lifestyle adjustments

Fluid intake: using this simple reliable method, urgency, frequency and nocturia will all be improved with fluid restriction. Patients with recurrent UTI's or urinary stones are ill-advised to restrict intake and are more challenging cases.

Caffeine: caffeine acts as a local irritant and as a diuretic. Caffeine restriction/elimination should be advised.

Ethanol: as well as a local irritant and powerful diuretic, ethanol relaxes the pelvic floor and should be taken in moderation.

Timed voiding: timed voiding can be effective in keeping bladder volumes below urge trigger volume. Voiding diaries or urodynamic studies can be used to estimate this volume and appropriate voiding frequency. This can be caregiver-mediated with incompetent or institutionalized patients.

Bladder training: difficult and uncomfortable for

patients, evidence exists that lengthening intervals between voiding episodes can be effective at reducing urge and mixed incontinence.

Pelvic exercises

Pelvic exercises can be helpful in the mildest cases of pelvic relaxation in motivated compliant patients.

Prophylactic kegels: these should be stressed in young females as part of school health curriculum and to pregnant and postpartum females. Little benefit is seen in more severe cases. Interrupting the urinary stream is an effective method of identifying the pelvic floor/sphincter and there is direct feedback when the patient can stop her stream. A few seconds at a time are effective if done frequently, with little risk of leading to incomplete emptying. An analogy for patients is doing sit-ups until one has a hard tummy with good muscle tone even at rest.

Therapeutic kegels: Compliant patients with mild-moderate stress incontinence will usually see benefit after 6-12 months of diligent Kegels, in particular learning to interrupt their stream. They need regular reinforcement and encouragement, as benefits come slowly. Referral to local physiotherapy or nurse continence advisor will increase likelihood of benefit. Benefits to patients with urge incontinence will be more modest. Kegels should be recommended to men following TURP and radical prostatectomy, as the external sphincter becomes the sole method of continence.

Biofeedback: Pelvic muscle exercises and bladder inhibition can be augmented by Biofeedback. It is more effective than placebo in women with urge and mixed incontinence.

Vaginal weights and pelvic exercises: Vaginal weights add little to the benefits of exercise alone, and local irritation, pain and poor compliance are noted.

Pelvic floor electrical stimulation: this is thought to induce electrical activity and contraction in pelvic floor muscles. Good data are lacking, but it may have some benefit in stress and mixed incontinence.

Neuromodulation

Neuromodulation may take the form of an implanted "bladder pacemaker". It requires test procedures with temporary electrodes and external stimulator. The electrode is implanted at a sacral nerve root, acting to inhibit the bladder efferents. If a favorable result is obtained during these tests, a permanent pacemaker and electrode are implanted. In highly selected patients this seemingly drastic step can offer improvement in quality of life.

SANS (Stoller Afferent Nerve Stimulator) works by a similar mechanism, but by stimulating the posterior tibial nerve above the ankle, which has a common sacral cord insertion as bladder efferents. An acupuncture-type needle is inserted and electrical stimulation is applied. Curling or flaring of the toes indicates the nerve is being stimulated. Half-hour treatments on a weekly basis, eventually stretching out to monthly, are needed. While results are unpredictable, successful results can be observed in patients whom have failed to respond to (or could not tolerate) anticholinergic medication.

Miscellaneous

Clean intermittent catheterization (CIC). CIC can be very effective in reducing wetting episodes in patients with overflow incontinence. Patients with atonic bladders with high residuals may benefit from CIC. Clean technique is usually all that is needed unless the patient is immune compromised. Prophylactic antibiotics may be needed in these cases. Nitrofurantion is an excellent first choice due to the low rates of resistance.

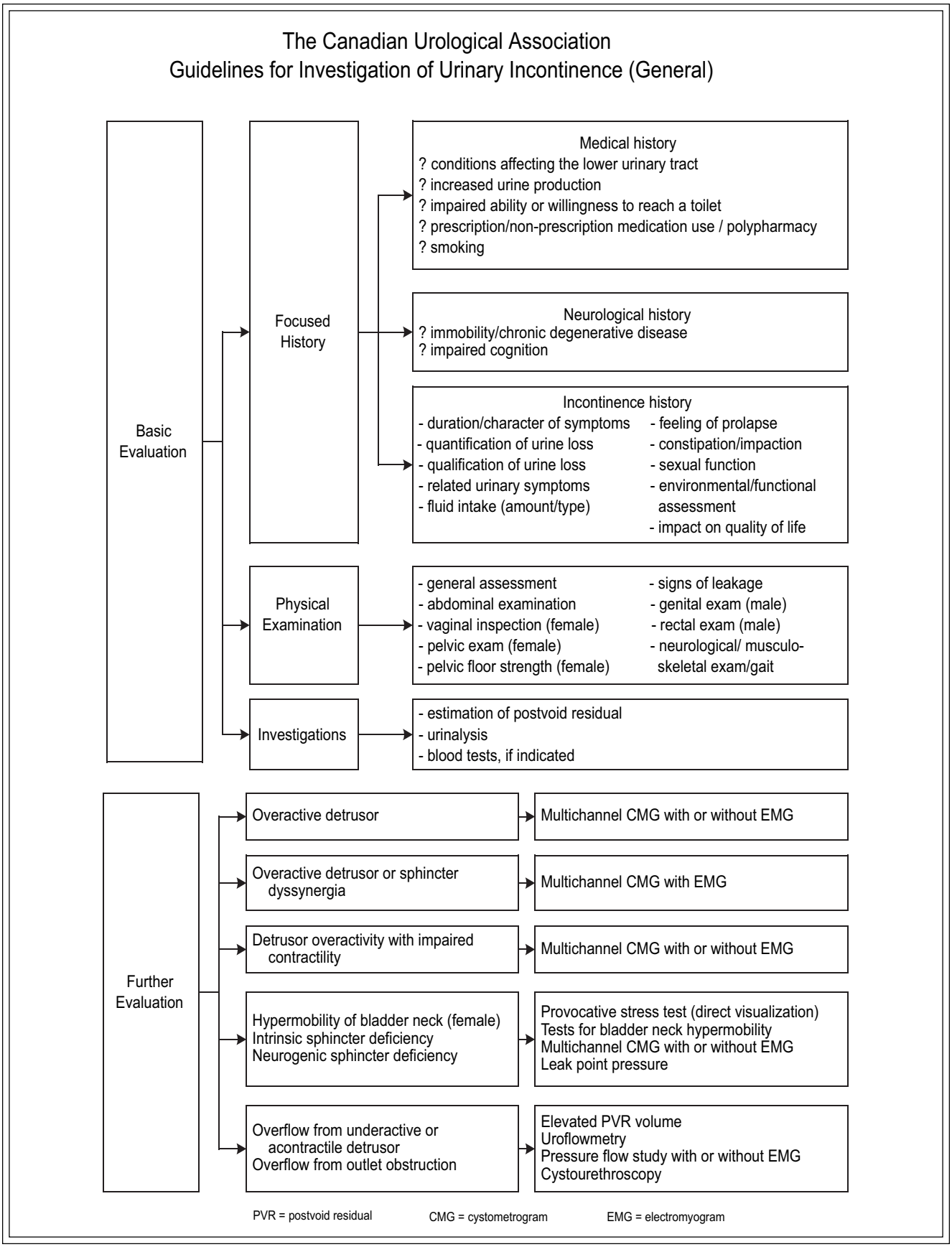
External collection devices. In males who do not carry high residual volumes, condom drainage is an effective management. Careful skin care is needed to avoid irritation under the condom. There has not been an effective well-tolerated external collection device for females.

Indwelling foley catheter. This is almost never recommended to manage an incontinent patient. In the short term or with a debilitated patient, an indwelling catheter can offer simplified nursing care and hygiene. However, infections, bleeding, leakage around the catheter, and bladder stones are the frequent end result of a chronic indwelling foley.

Suprapubic catheter. In highly selected patients a suprapubic catheter is a viable long-term option. Bed bound patients can be nursed more easily with a suprapubic catheter, and the usual complication rates are lower.

Penile compression devices. There are no good data on penile clamps, compliance is poor and most are uncomfortable in the long term.

Pessaries and vaginal inserts. These widely used devices suffer poor compliance from local irritation, retention, ulceration. They are usually used in elderly females not otherwise good surgical candidates. Modifications of classic designs to better support the bladder neck and reduce incontinence have unproven track records.


The Canadian Urological Association
Guidelines for Investigation of Urinary Incontinence (General)
Basic Evaluation
Focused History
Medical history
? conditions affecting the lower urinary tract
? increased urine production
? impaired ability or willingness to reach a toilet
? prescription/non-prescription medication use / polypharmacy
? smoking
Neurological history
? immobility/chronic degenerative disease
? impaired cognition
Incontinence history
- duration/character of symptoms
- quantification of urine loss
- qualification of urine loss
- related urinary symptoms
- fluid intake (amount/type)
- feeling of prolapse
- constipation/impaction
- sexual function
- environmental/functional assessment
- impact on quality of life
Physical Examination
- general assessment
- abdominal examination
- vaginal inspection (female)
- pelvic exam (female)
- pelvic floor strength (female)
- signs of leakage
- genital exam (male)
- rectal exam (male)
- neurological/ musculo-skeletal exam/gait
Investigations
- estimation of postvoid residual
- urinalysis
- blood tests, if indicated
Further Evaluation
Overactive detrusor
Multichannel CMG with or without EMG
Overactive detrusor or sphincter dyssynergia
Multichannel CMG with EMG
Detrusor overactivity with impaired contractility
Multichannel CMG with or without EMG
Hypermobility of bladder neck (female)
Intrinsic sphincter deficiency
Neurogenic sphincter deficiency
Provocative stress test (direct visualization)
Tests for bladder neck hypermobility
Multichannel CMG with or without EMG
Leak point pressure
Overflow from underactive or acontractile detrusor
Overflow from outlet obstruction
Elevated PVR volume
Uroflowmetry
Pressure flow study with or without EMG
Cystourethroscopy
PVR = postvoid residual
CMG = cystometrogram
EMG = electromyogram

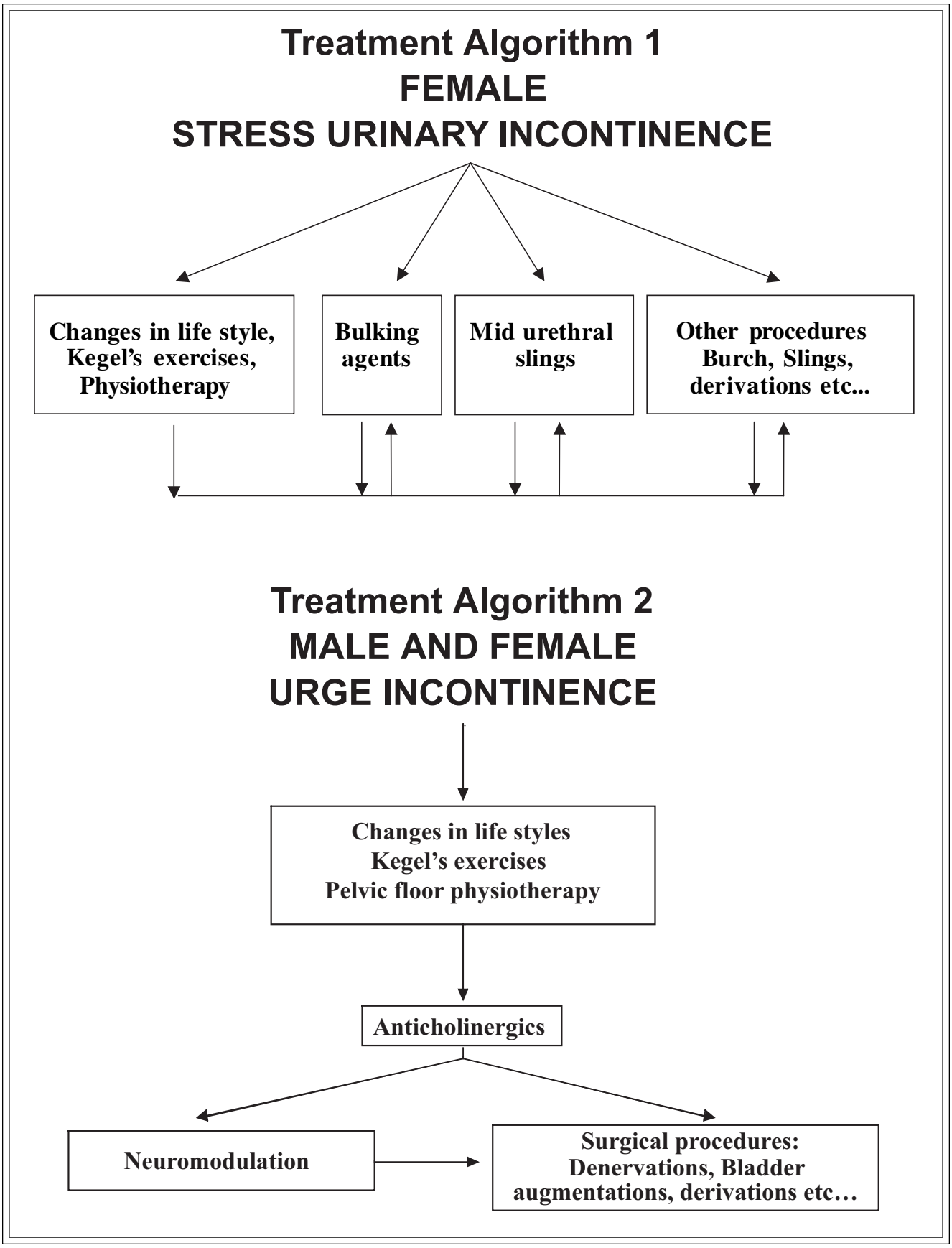

Treatment Algorithm 1
FEMALE
STRESS URINARY INCONTINENCE
Changes in life style, Kegel's exercises, Physiotherapy
Bulking agents
Mid urethral slings
Other procedures Burch, Slings, derivations etc...
Treatment Algorithm 2
MALE AND FEMALE
URGE INCONTINENCE
Changes in life styles
Kegel's exercises
Pelvic floor physiotherapy
Anticholinergics
Neuromodulation
Surgical procedures: Denervations, Bladder augmentations, derivations etc…

TABLE 1.

Treatment	Indications	Generic name	Brand name	Starting dose	Maximal dose	Clinical evidence
First line	OAB	Oxybutynin ER	Ditropan XL®	5 mg o.d.	10 mg o.d.	proven
	OAB	Tolterodine ER	Unidet™	2 mg o.d	4 mg o.d.	proven
Second line	OAB	Tolterodine L-tartare	Detrol™	2 mg o.d.	2 mg b.i.d.	proven
	OAB	Oxybutynin chloride	Ditropan®	2.5 mg t.i.d.	5 mg q.i.d.	proven
Specific	OAB	Propantheline bromide	Pro-Banthine®	7.5 mg t.i.d.	15 mg q.i.d.	proven
indications	OAB, SUI	Imipramine HCL	Tofranil®	25 mg h.s.	25 mg t.i.d	suggested
	SUI	Estrogens				suggested
Optional	OAB	Flavoxate HCL	Urispas®	200 mg t.i.d.	400 mg q.i.d.	unproven

Pharmacological treatment

Table 1 summarizes the available drugs, their indications, doses and the level of evidence of their efficacy. When anticholinergics are indicated and reimbursement is not an issue, the prescription of long acting formulations (Oxybutinin XL or Tolterodine (Unidet) is preferable over the immediate released ones. This recommendation is based mainly on their better side effect profile and their "one pill a day" presentation.

Surgical treatment

Female stress urinary incontinence

Surgery to correct female stress urinary incontinence is indicated when the degree of incontinence is sufficiently troublesome to the patient to warrant surgery, conservative non-invasive therapies have been considered, and the incontinence has been observed by the examiner and its causes adequately evaluated.

Factors to be considered in choice of procedure

- Relative contributions of urethral hypermobility and intrinsic urethral insufficiency (ISD)
- The patient's lifestyle, expectations, age and overall health
- Presence of associated pathology (vaginal prolapse, urethral diverticulum)
- The availability of the technique (re cost for injectable)
- Regardless of the choice of procedure, the surgeon must be experienced enough with whatever procedure is chosen to perform it competently
- The success rates of transvaginal suspensions in general are significantly less than open retropubic or sling procedures

Difficulties in establishing evidence based guidelines

Many reports lack long-term follow-up, whereas failures often become manifest 5 years or more after the procedure. Reports of 6 months or 1-year follow-up do not establish efficacy compared to procedures like the Burch Sling, MMK or PV Sling where long term follow-up of large numbers of patients exists.

There are inconsistencies in the patient selection criteria, definition of success, few studies are prospective and almost none are randomized and comparative.

General guidelines for procedure selection

- Primary stress urinary incontinence in the female is effectively treated by a retropubic suspension (Burch or MMK), or a pubovaginal sling procedure
- Pubovaginal slings are the procedure of choice in the presence of significant ISD, the absence of hypermobility, or in the treatment following a failed retropubic suspension where an element of ISD is likely
- Urethral bulking agents (when available) are recommended as first-line treatment of SUI with or without hypermobility
- New, less invasive, techniques like Tension Free Vaginal Tape (TVT) have good short-term results, but await long-term and comparative studies to establish their merit and their appropriate

indications. Presently TVT has the strongest literature evidence of safety and efficacy.
- Artificial sphincters are not recommended as the primary therapy in women.

Stress urinary incontinence in men

When lifestyle modifications and pelvic floor exercises fail to improve the patient's quality of life enough, surgical approach must be considered.

Periurethral or pericervical bulking injections. Variable success rates and lack of long-term results don't allow the recommendation of these techniques.

Artificial sphincters. It is the treatment of choice in neurogenic and non-neurogenic SUI in men. However, patients must be informed of the high rate of incomplete continence and mechanicalfailures.

Male slings. Different techniques of male slings, with or without bone anchors are presently offered. However, they must still be considered as an experimental approach considering the lack of long-term results available.

Surgical treatment of anatomical abnormality leading to incontinence

Vesicovaginal and ureterovaginal fistulas,ectopic implantation or ureters, urethral diverticulum, etc. are conditions which have to be treated surgically.

Conclusion

These first Canadian guidelines on incontinence have been completed in 2005, reflecting the Canadian health environment. This field of UI is in constant progression and, when of proven efficacy, new medications and devices have to be included in the proposed algorithm of care. We recommend an update of these guidelines on a 5-year basis. □

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