Canadian guidelines for the management of benign prostatic hyperplasia

J. Curtis Nickel, MD,[1] Sender Herschorn, MD,[2] Jacques Corcos, MD,[2] Bryan Donnelly, MD,[1] Doug Drover, MD,[2] Mostafa Elhilali, MD,[1] Larry Goldenberg, MD,[1] John Grantmyre, MD,[2] Bruno Laroche, MD,[2] Richard Norman, MD,[1] Bruce Piercy, MD,[1] Karen Psooy, MD,[2] Gary Steinhoff, MD,[1] John Trachtenberg, MD,[1] Fred Saad, MD,[1] Simon Tanguay, MD[1]

[1]Canadian Prostate Health Council
[2]Canadian Urological Association Guidelines Committee

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Objective: *To develop the first Canadian guidelines for the management of lower urinary tract symptoms in men with benign prostatic hyperplasia (BPH).*
Methods: *These guidelines, developed under a mandate provided by the Canadian Urological Association (CUA), were a collaborative effort between the CUA guidelines committee and the Canadian Prostate Health Council. BPH guidelines developed by the American Urological Association, the European Association of Urology, the World Health Organization International Consultation on BPH, and similar committees from Germany, Sweden and Australia were reviewed. The committee further reviewed a systematic literature search, updated to May 2004, and systematically derived Canadian urological opinion data.*
Results: *The subsequent Canadian BPH guidelines were developed as an evidence based consensus among the committee members. Mandatory evaluation includes history, physical examination and urinalysis, while a symptom inventory and PSA in selected patients are recommended. Serum creatinine, uroflow, voiding diary, post void residual and sexual function questionnaire are optional. Unless there is an indication, other related tests are not recommended. Treatment choices should be governed by the severity of the symptoms, bother and patient preference. Guidelines for medical, surgical and minimally invasive treatment as well as special considerations are described in terms of guideline, option and recommendation.*
Conclusions: *Diagnostic and treatment guidelines for BPH reflect the Canadian social priorities, economics, socialized medical practice, manpower issues, and medicolegal considerations.*

Key Words: benign prostatic hyperplasia, BPH, lower urinary tract symptoms, LUTS, diagnosis, treatment, guideline

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Address correspondence to Dr. J. Curtis Nickel, Department of Urology, Queen's University, Kingston General Hospital, Kingston, Ontario K7L 2V7 Canada

Preamble

There have been significant changes over the last decade in the approach to the diagnosis of benign prostatic hyperplasia (BPH) as well as available treatment options for this very common and progressive medical condition of aging men. Until now, no Canadian guidelines have been developed for the diagnosis and treatment of BPH. Canadian practice generally followed a pattern of anecdotal experience, review of recently published BPH studies,

TABLE 1. **Canadian BPH guideline: diagnostic guidelines**

Mandatory
History
Physical Examination including digital rectal examination
Urinalysis
Recommended
Formal symptom inventory
PSA
Optional
Creatinine
Voiding diary
Uroflow
Post void residual
Sexual function questionnaire
Not recommended
Cystoscopy
Cytology
Urodynamics
Radiological evaluation of upper urinary tract
Prostate ultrasound
Prostate biopsy

opinion leader continuing medical educational programs, industry detailing and guidance provided by the 1994 benign prostatic hyperplasia (BPH) clinical practice guideline, produced by the Agency for Health Care Policy and Research (AHCPR) of the United States Department of Health and Human Services.[1] The 2003 American Urological Association (AUA) guideline on management of benign prostatic hyperplasia was released at the AUA annual meeting in Chicago, April 26 – May 1, 2003. The diagnosis and treatment recommendations were published later in August 2003.[2] The European Association of Urology (EAU) also recently updated their BPH guidelines in 2004. It is recognized that there are both profound and subtle differences in social priorities, economics, socialized medicine, manpower issues, medicolegal considerations and Canadian practice trends that warrant development of Canadian BPH guidelines.

The Canadian Urological Association (CUA) has recognized the importance of developing independent Canadian guidelines to assist the Canadian urologist and physician and has established the CUA guidelines committee. The CUA executive has mandated that the CUA guidelines committee may employ the expertise provided by members of the Canadian Prostate Health Council (CPHC) to develop Canadian BPH guidelines. These guidelines were therefore developed under a mandate provided by the CUA as a collaborative effort between the CUA guidelines committee and the CPHC. The joint committee reviewed the BPH guidelines developed by the AUA,[1,2] the EAU,[3,4] the World Health Organization International Consultation on BPH,[5,6] and similar committees from Germany, Sweden and Australia. The committee further reviewed a systematic literature search, data abstraction and analyses prepared for the AUA and EAU BPH guidelines committees. The literature search was updated to May 2004. Further guidance was provided by a recent report that reviewed Canadian urological opinion of the 2003 AUA BPH guidelines.[7] A selected bibliography is provided.[8] The subsequent Canadian BPH guidelines were developed as an evidence based consensus among the committee members. These guidelines refer to the typical patient over 50 years of age presenting with Lower Urinary Tract Symptoms (LUTS) believed to be associated with benign prostatic obstruction [BPO]. Men with LUTS associated with non-BPO causes will require more extensive diagnostic workup and different treatment considerations. Diagnostic guidelines, Table 1 are described in terms of mandatory, recommended, optional and not recommended tests. Guidelines for treatment (available treatments shown in Table 2) are

TABLE 2. **Canadian BPH guideline: treatment options**

Watchful waiting with lifestyle modification
Medical
Alpha blockers
5 alpha reductase inhibitors
Combination therapy
Phytotherapy
Surgical
Invasive Surgery
TURP
TUIP
Open prostatectomy
Laser prostatectomy
Minimally Invasive Surgical Therapies
TUMT
TUNA
Stents
Not currently recommended
Balloon dilation
Absolute ethanol injection
High intensity focused ultrasound
Interstitial laser coagulation
Water-induced thermal therapy
Plasma kinetic tissue management system

described in terms of guideline (standard and/or evidence-based), option (insufficient evidence or patient preference) and recommendation (based on best available evidence).

Diagnostic guidelines

Mandatory

In the primary evaluation of a patient presenting with LUTS, evaluation of symptom severity and bother is essential. Medical history should include relevant prior and current illnesses as well as prior surgery and trauma. Current medication including over the counter drugs must be reviewed. A focused physical examination including a DRE is also mandatory. Urinalysis is required to rule out diagnoses other than BPH that may cause LUTS and may require additional diagnostic tests.

- History
- Physical examination including DRE
- Urinalysis

Recommended

A formal symptom inventory (e.g. International Prostate Symptom Score, IPSS or AUA Symptom Score) is recommended for objective assessment of symptoms at initial contact, for follow-up of symptom evolution for those on watchful waiting and for evaluation of response to treatment. PSA should be offered to patients who have at least a 10 year life expectancy and for whom knowledge of the presence of prostate cancer would change management as well as those for whom PSA measurement may change the management of their voiding symptoms (estimate for prostate volume).

- Symptom inventory (should include bother assessment)
- PSA (selected patients)

Optional

In cases where the physician feels it is indicated, it is reasonable to proceed with one or more of the following:

- Serum creatinine
- Uroflow
- Voiding diary
- Post void residual
- Sexual Function Questionnaire

Not recommended

It is not recommended to proceed with the following diagnostic modalities in the routine initial evaluation of a typical patient with LUTS clinically associated with BPH. The following investigations may be required in patients with a definite indication (hematuria, unclear diagnosis, DRE abnormalities, poor response to medical therapy, surgical planning etc).

- Cystoscopy
- Cytology
- Urodynamics
- Radiological evaluation of upper urinary tract
- Prostate ultrasound
- Prostate Biopsy

Treatment guidelines

Principles of treatment

Treatment choices should be governed both by the severity of the symptoms, bother and patient preference. Such a decision depends upon patients being sufficiently informed about treatment options, and the harms and benefits of such treatment. It is well recognized that even with severe symptoms, patients may choose a less effective but less risky therapy; often this fails to coincide with professional urological opinion. Except in the case of an absolute indication for surgery, the choice of treatment should, where possible, be made as much by the patient as by his physician.

Guideline: Information on the benefits and harms of BPH treatment options should be explained to all patients who are bothered enough to consider therapy. Patients should be invited to participate as much as possible in the treatment choice.

Recommendation: Patients with mild symptoms (e.g. IPSS <7) should be counseled about a combination of lifestyle modification and watchful waiting. Patients with mild symptoms and severe bother should undergo further assessment.

Option: Treatment options for patients with bothersome moderate (e.g. IPSS 8 – 18) and severe (e.g. IPSS 19 – 35) symptoms of BPH include watchful waiting/lifestyle modification, as well as medical, minimally invasive, or surgical therapies.

Life style modifications with watchful waiting

Recommendation: Patients on watchful waiting should have periodic physician monitored visits.

Option: Physicians can use baseline age, LUTS severity, prostate volume and/or serum PSA to advise patients of their individual risk of symptom progression, acute urinary retention or future need for BPH related surgery (these risk factors identify patients at risk for progression).

Option: A variety of lifestyle changes may be suggested for patients with non-bothersome

symptoms. These can include the following:

- Fluid restriction
- Avoidance of irritative foods or beverages e.g. caffeine or alcohol
- Avoidance/monitoring of some drugs e.g. diuretics, decongestants, antihistamines, antidepressants
- Timed or organized voiding (bladder retraining)
- Pelvic floor exercises
- Avoidance or treatment of constipation

Medical treatment

Alpha-blockers

Option: Alfuzosin, doxazosin, tamsulosin and terazosin are appropriate treatment options for patients with LUTS secondary to BPH.
Recommendation: Although there are differences in the adverse-event profiles of these agents, the Committee believes that all four agents have equal clinical effectiveness. Choice of agent should depend on patient's co-morbidities, side effect profiles and tolerance.
Guideline: Prazosin is not recommended.

Five alpha-reductase inhibitors

Option: The 5 alpha-reductase inhibitors dutasteride and finasteride are appropriate and effective treatments for patients with LUTS associated with demonstrable prostatic enlargement (in patients without prostate cancer, PSA value may be useful as an estimate of prostate size).
Guideline: 5 alpha-reductase inhibitors are not appropriate treatments for men with LUTS who do not have clinical evidence of prostatic enlargement.

Combination therapy (alpha-blocker and 5-alpha reductase inhibitor)

Option: The combination of an alpha-adrenergic receptor blocker and a 5 alpha-reductase inhibitor (combination therapy) is an appropriate and effective treatment for patients with LUTS associated with demonstrable prostatic enlargement (in patients without prostate cancer, PSA value may be useful as an estimate of prostate size).
Option: Patients successfully treated with combination therapy may be given the option of discontinuing the alpha-blocker after 6-12 months. If symptoms recur, the alpha blocker should be restarted.

Phytotherapy

Option: If patients are interested in complementary approaches (phytotherapeutic or other supplements) for LUTS secondary to BPH, they may be counseled that some plant extracts (particularly saw palmetto berry extract and pygeum Africanum) have shown some efficacy in small but unconvincing studies. Further proof is required before phytotherapy can be recommended as standard therapy; however, these agents do appear to be safe.
Guideline: Phytotherapeutic agents and other dietary supplements cannot be recommended as standard treatment of BPH at this time.

Surgery

Transurethral resection of the prostate (TURP)

Option: TURP should be considered the criterion standard (gold standard) treatment for patients with bothersome moderate or severe LUTS who request active treatment or who either fail or do not want medical therapy. Patients should be informed that the procedure may be associated with short and long term complications.
Guideline: Absolute indications to recommend TURP include

- Failure of medical therapy
- Urinary retention (intractable)
- Renal insufficiency (caused by BPO)

Relative indications to recommend TURP include

- Recurrent cystitis
- Bladder calculi
- Persistent prostatic bleeding

Transurethral incision of the prostate (TUIP)

Option: TUIP is appropriate surgical therapy for prostate glands less than 30 grams. These patients should experience results similar to TURP with lower incidence of retrograde ejaculation than TURP.

Open prostatectomy

Option: Open prostatectomy is indicated for men whose prostates are too large to be resected 'comfortably' and 'safely'.

Transurethral electrovapourization of prostate (TUVP)

Option: TUVP is an alternative operation to TURP or TUIP and short-term results are comparable to TURP, particularly in men with small prostates. Patients experience higher incidence of irritative symptoms, dysuria, and urinary retention and few long-term studies are available.

Laser prostatectomy

Option: A variety of lasers (YAG; KTP; Holmium:

YAG) and delivery systems (end-firing; side-firing; interstitial) are available for prostatic tissue coagulation or vaporization/ablation, and each has particular characteristics and potential advantages. Holmium laser enucleation (HOLEP) has been used effectively in larger glands with reduced hospitalization, bleeding and duration of catheterization.

Minimally invasive surgical therapies (MIST)

Transurethral microwave therapy (TUMT)

Option: TUMT is a reasonable treatment choice for the patient who has moderate symptoms, small to moderate gland size, and a desire to avoid more invasive therapy for potentially less effective results.

Transurethral needle ablation (TUNA)

Option: TUNA may be a reasonable option for the relief of symptoms in the younger, active individual in whom sexual function remains an important quality of life issue (less risk of retrograde ejaculation). Limited data is available on long-term outcomes.

Stents

Option: Temporary and permanent stents may be considered in patients with severe urinary obstruction secondary to BPH who are medically unfit for surgery (or waiting to become medically fit for surgery or MIST).
Guideline: Stents are not recommended as standard therapy for LUTS associated with BPH.

Other MIST therapies

Guideline: The following obsolete or evolving MIST therapies are not recommended as standard therapy at this time

- Balloon dilatation
- Absolute ethanol injection
- High intensity focused ultrasound
- Water induced thermotherapy
- Plasma kinetic tissue management

Special situations, Table 3

Symptomatic prostatic enlargement but without bother

Option: Patients with symptomatic prostatic enlargement but without significant bother may be offered a 5 alpha-reductase inhibitor to prevent progression of the disease. However, the disadvantages and the need for long-term daily therapy should be discussed with the patient in relation to his risk of progression.

TABLE 3. **Canadian BPH guideline: special considerations**

Symptomatic patient with large prostate not currently bothered by symptoms
Acute urinary retention
BPH related bleeding
BPH with associated chronic prostatitis symptoms
BPH patients with prostate cancer concern

Acute urinary retention (AUR)

Option: Men with AUR may be offered a trial without catheter 2-7 days after catheterization. If the patient is not receiving an alpha-blocker (or suboptimal dose), then it is reasonable to use an alpha-blocker prior to and after the catheter is removed. If the trial of voiding fails, the patient should be considered for more invasive therapy.

BPH related bleeding

Guideline: All other possible causes of bleeding must been ruled out before BPH is determined as the source.
Option: In men with BPH related hematuria, a trial with a 5 alpha-reductase inhibitor is appropriate. If the bleeding persists, a surgical option is recommended.

BPH with associated chronic prostatitis symptoms

Option: In the absence of infection, the use of a-blockers, 5-alpha reductase inhibitors (or combination of alpha-blockers and 5-alpha reductase inhibitors) and/or anti-inflammatory agents may be considered in patients with BPH and prostatitis like symptoms.

BPH Patients with prostate cancer concern

Option: The BPH patient who is concerned about prostate cancer may be counseled on the proven benefits (other than reduction of BPH symptoms and progression) of using a 5 alpha-reductase inhibitor for prostate cancer risk reduction. As part of this discussion, patients should be advised about the potential low risk of development of high-grade prostate cancer when taking these agents.

Summary

This report represents the first guidelines specifically developed for the management of BPH in Canada. While the Canadian guidelines are similar to the AUA 2003 and EAU 2004 Guidelines, there are definite variations and modifications in design, presentation and recommendations that are appropriate to the Canadian

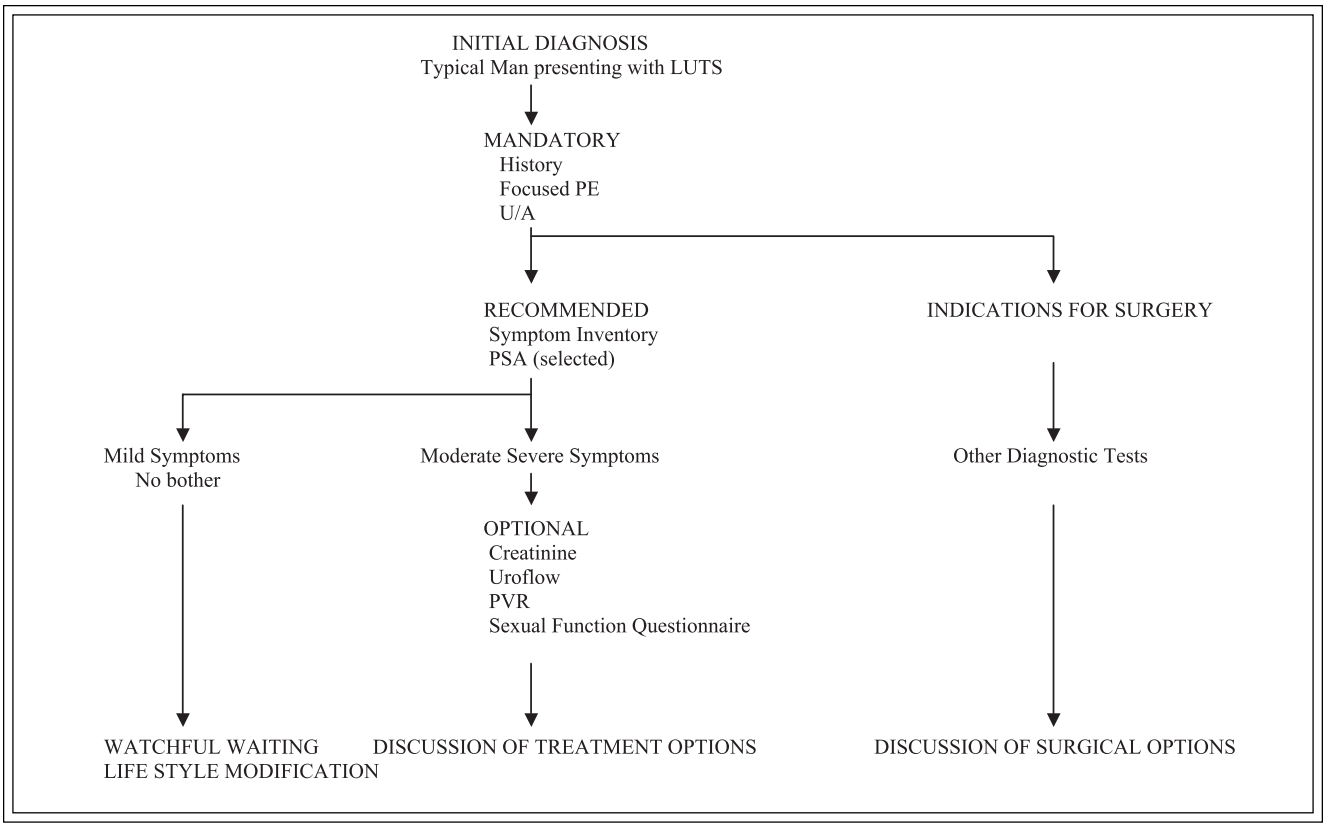

Figure 1. Diagnostic algorithm.

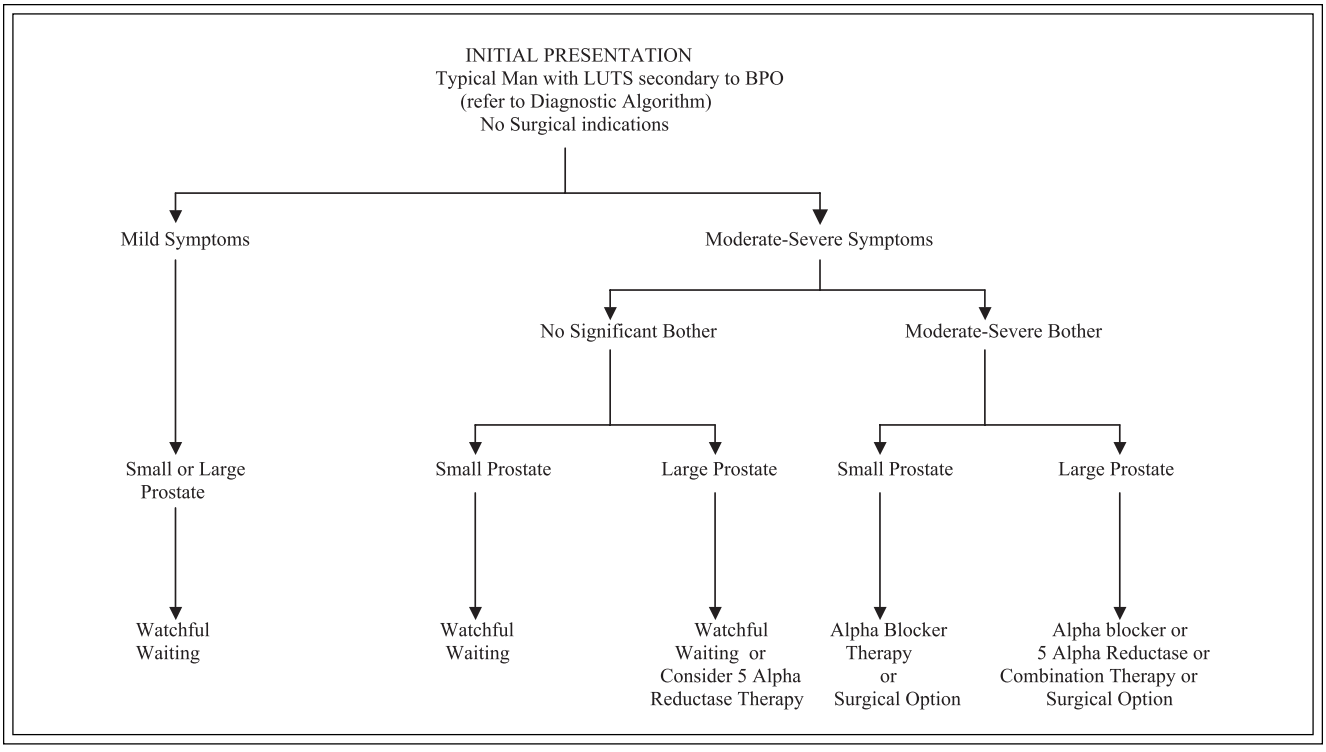

Figure 2. Treatment algorithm.

medical environment. Figures 1 and 2 represent suggested diagnostic and treatment algorithms respectively which are based on these guidelines. The management of BPH is an evolving process and it is important that these guidelines be critically reviewed and updated on a regular basis as more evidence-based data becomes available. □

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