



Fremantle Hospital & Health Service
Nurse Practitioner – Continence Service

CLINICAL PRACTICE
GUIDELINE & PROTOCOL



Government of Western Australia
Department of Health

LOWER URINARY TRACT SYMPTOMS

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INTRODUCTION - LOWER URINARY TRACT SYMPTOMS

Benign prostatic hyperplasia (BPH) is a widespread problem that increases with age, and affects nearly all men. It can start after the age of 40. Some men do not have any symptoms even though their prostate may have started to grow larger. BPH usually becomes more of a problem over time. Almost one in four men aged 40 – 49 years receive treatment for prostate problems, and this increases to three in every four men aged 70 years and older.¹

Pathophysiology

Lower urinary tract symptoms (LUTS) symptoms can be related either to the obstructive component of the prostate or to the secondary response of the bladder to the outlet resistance.

The obstructive component can be subdivided into mechanical obstruction and dynamic obstruction.

As the prostate enlargement occurs mechanical obstruction may result from the intrusion into the urethral lumen or bladder neck, resulting in a higher bladder outlet resistance. Prostate size on Digital Rectal Examination (DRE) correlates poorly with symptoms.

The dynamic component of prostate obstruction explains the variable nature of the symptoms experienced by patients. The prostatic stroma, composed of smooth muscle and collagen, is rich in adrenergic nerve supply. The level of autonomic stimulation thus sets a "tone" to the prostatic urethra. Use of alpha-blocker therapy decreases this tone, resulting in a decrease in outlet resistance.²

The irritative voiding complaints of BPH result from the secondary response of the bladder to the increased outlet resistance. As the volume of the prostate increases the urethral lumen is compressed causing outlet obstruction. Bladder trabeculation often follows because of muscle hypertrophy in response to the need for a higher intravesical pressure to overcome the increased resistance to voiding. Initial symptomatic changes include increased bladder instability and irritability, which can eventually progress to muscular decompensation with permanent loss of detrusor contractile ability.³

**PROTOCOL FOR THE ASSESSMENT and MANAGEMENT of the PATIENT
WITH LOWER URINARY TRACT SYMPTOMS (LUTS)**

SCOPE OF PRACTICE		
Practitioner	Scope	Outcomes
Nurse Practitioner - Urology/Continence (NPUC)	Symptoms suggestive of lower urinary tract morbidity.	Appropriate patients are identified and treated by NPUC
Medical Practitioner ± NPC	LUTS not responsive to treatment.	Patients outside the NPC scope are referred to Medical Practitioners
PATIENT ASSESSMENT		
Presentation	Symptoms	Outcomes
Irritative voiding symptoms⁴	<ul style="list-style-type: none"> • Urgency • Frequency • Nocturia • Urge incontinence 	LUTS will be recognised and a plan for future management devised.
Symptoms associated with obstruction⁴	<ul style="list-style-type: none"> • Hesitancy • Decreased force and caliber of stream • Sensation of incomplete bladder emptying • Double voiding - urinating a second time in a short period of time • Straining to void • Post void dribbling • Overflow incontinence 	Incomplete bladder emptying will be considered in the presence of at least one of these symptoms.
Symptoms associated with infection	<ul style="list-style-type: none"> • Temperature • Tachycardia • Pain 	Urinary Tract Infection will be considered in the presence of fever The need for analgesia will be considered if pain is reported. UUTI will be considered in the presence of flank pain.
Urological history	<ul style="list-style-type: none"> • Previous urethritis, urethral instrumentation and/or, trauma 	Previous urethral trauma will be considered as a possible cause of presenting symptoms.
Medical history	<ul style="list-style-type: none"> • Medications • Confusion • Impaired mobility • Manual dexterity • Constipation or faecal impaction • Polyuria • Past medical history • Known allergies 	Predisposing and associated conditions will be detected and considered when determining a diagnosis

INVESTIGATIONS		
Quantification of symptoms	International Prostate Symptom Score (I-PSS) ⁵ IPSS symptom score <ul style="list-style-type: none"> • < 7 mild • 7-19 moderate • >19 severe 	The IPPS will be used to quantify information relating to frequency, urgency, hesitancy, stream, nocturia, a feeling of incomplete emptying and quality of life. ⁵
Voiding diary⁴	Usually kept for 3 days to determine: <ul style="list-style-type: none"> • frequency of voiding day and night • volumes voided • amount and type fluids • any urinary leakage. 	Information from the voiding diary will be used in conjunction with other findings to contribute to the overall clinical picture. ⁶
Specific physical assessment⁴		Other urinary tract pathology - UTI, prostate cancer, bladder cancer, urethral stricture, bladder neck contracture, bladder stone, neurogenic bladder will be eliminated as a possible cause of presenting symptoms
	Abdominal assessment	Distention of the bladder will be detected on abdominal examination
	Digital Rectal Examination (DRE)	Enlargement of the prostate will be detected on examination
	Flow rate (Uroflowmetry)	The strength and volume of flow will be determined during uroflowmetry
Imaging	Bladder scan	Residual urine and retention of urine will be detected at scanning
In the presence of concomitant urinary tract disease or complications of BPH	Renal tract ultrasound	
Pathology	Urinalysis Consider need for MSU	The need for an MSU will be considered if urine is positive for nitrites, blood, pus and/or glucose.
Other If the serum urea and creatinine is elevated	U&Es in the presence of urinary retention or severe voiding symptoms. ⁷ Renal tract ultrasound if creatinine elevated	Elevated serum urea and creatinine may indicate hydronephrosis. Patients with suspected hydronephrosis will be referred to a urologist.
If prostate firm and nodular	Consider need for Prostate Specific Antigen test.	Patients with abnormal DRE will be referred to the urology team
If prostate tender	Consider prostatitis	
If bladder cancer is suspected	Consider sending urine samples x 3 for cytology	Patients with cell cytology suggestive of malignancy will be referred to a urologist.
If surgery is contemplated	Consider flexible cystoscopy to determine surgical approach.	

RECOMMENDATIONS FOR MANAGEMENT

RELIEF OF RETENTION OF URINE

1. Insert IDC.
2. If unable to insert an IDC
 - i. consider inserting guidewire using a cystoscope.
 - ii. if cystoscopy unsuccessful, refer to urologist for suprapubic catheter insertion
3. Consider need to monitor urine output – post obstructive diuresis
4. If post obstructive diuresis occurs then consult medical team for fluids and electrolyte management
5. Assess the need for alpha-blockers
6. Discuss ongoing management and/or need for admission with urologist

ONGOING MANAGEMENT

OPTION 1 - Conservative management - Watchful Waiting

Expect chronic, fluctuating and usually benign course of this common problem⁸

Expected outcome

Improvement in symptoms will be reported within two weeks

Indications

1. BPH without significant obstruction and without bothersome symptoms
2. I-PPS score <7²

Suggest Lifestyle modifications

1. Limit fluid intake in the evening
2. Empty bladder completely when voiding - especially at night
3. Avoid diuretics that are active at night
4. Avoid medications with anticholinergic properties

OPTION 2 - Medical Therapy⁹

FORMULARY

alpha -1-adrenergic antagonists (α -blockers)

Reduce tension in the smooth muscle in the prostate, prostate capsule and bladder neck so reducing size thus decreasing resistance to urinary flow.¹⁰

Indications

Moderate to severe symptoms I-PPS score 7-19²

Symptoms are having an effect on quality of life

Contraindications

Orthostatic hypotension; severe hepatic, renal impairment; other concurrent alpha1-blockers

Precautions

Exclude prostate cancer, other urological conditions; MI, angina; cataract surgery; ejaculation disorder; not indicated for use in women, children

CHF due to mechanical obstruction; postural hypotension, angina, elderly

Side effects

Orthostatic hypotension and dizziness

Dose

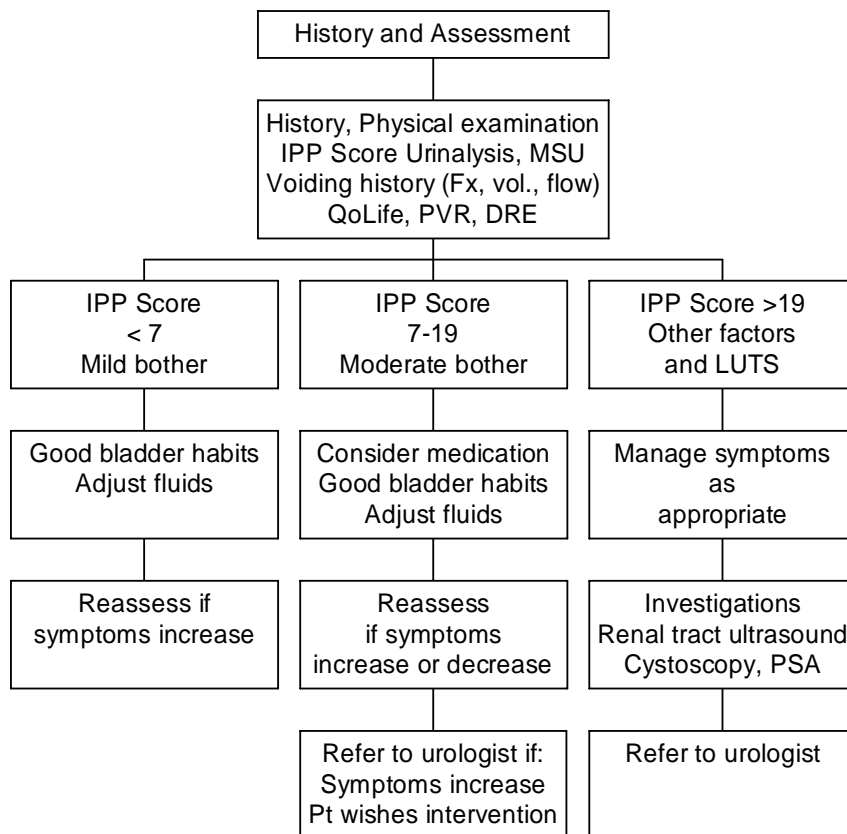
Drug	Form	Strength	Route	Recommended Dosage
Prazosin	Tablet	1mg, 2mg	Oral	0.5 mg nocte Increase to bd (max dose 2mg bd)
Tamsulosin	Tablet	400mcgm	Oral	400mcgm mane

OPTION 3 - Surgical Management

1. Management of LUTS depends on symptoms
2. Absolute indications for surgical intervention
 - Refractory retention
 - Recurrent UTI due to BPH
 - Recurrent gross haematuria where other causes are excluded
 - Renal insufficiency secondary to bladder outlet obstruction (BOO)
 - Bladder calculi
 - Large bladder diverticula that do not empty well secondary to an enlarged prostate
3. Refer to urologist for surgery as appropriate

Discharge	Holistic assessment	Patient is deemed safe to return home
Patient education	<ul style="list-style-type: none">• Medications• Lifestyle changes• Exercises• Fluid adjustments	The patient will demonstrate an understanding of the problem, treatment and measures which may reduce symptoms.
Follow up	Out patient appointments	Appointments will be made to assess progress of treatment
Referrals	<ul style="list-style-type: none">• To urologist• To other health care providers as indicated	Patients with problems outside the NP's scope of practice are referred to appropriate health care providers
Certificates and Letters	<ul style="list-style-type: none">• Medical certificate• Attendance certificate	Certificates are provided when required

ALGORITHM FOR THE MANAGEMENT OF LOWER URINARY TRACT SYMPTOMS



International prostate symptom score (IPSS)



Name: _____

Date: _____

	Not at all	Less than 1 time in	Less than half the	About half the	More than half	Almost always	Your score
<i>Incomplete emptying</i> Over the past month, how often have you had a sensation of not emptying your bladder completely after you finish urinating?	0	1	2	3	4	5	
<i>Frequency</i> Over the past month, how often have you had to urinate again less than two hours after you finished urinating?	0	1	2	3	4	5	
<i>Intermittency</i> Over the past month, how often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5	
<i>Urgency</i> Over the last month, how difficult have you found it to postpone urination?	0	1	2	3	4	5	
<i>Weak stream</i> Over the past month, how often have you had a weak urinary stream?	0	1	2	3	4	5	
<i>Straining</i> Over the past month, how often have you had to push or strain to begin urination?	0	1	2	3	4	5	
	None	Once	Twice	3 times	4 times	5 times or more	Your score
<i>Nocturia</i> Over the past month, many times did you most typically get up to urinate from the time you went to bed until the time you got up in the morning?	0	1	2	3	4	5	
Total IPSS score							

Quality of life due to urinary symptoms	Delighted	Pleased	Mostly satisfied	Equally satisfied/dissatisfied	Mostly dissatisfied	Unhappy	Terrible
If you were to spend the rest of your life with your urinary condition the way it is now, how would you feel about that?	0	1	2	3	4	5	6

Total score: 0-7 Mildly symptomatic; 8-19 moderately symptomatic; 20-35 severely symptomatic.

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