

Benign Prostatic Hyperplasia

UNDERSTANDING THE FACTS BEHIND

1. Definition

- A benign (not cancer) condition in which an overgrowth of prostate tissue pushes against the urethra and the bladder, blocking the flow of urine
- Affects most men over age 50, frequency increases after age of 30

2. Pathophysiology

- Stromal-epithelial interaction theory
 - Proliferation of both the epithelial and stromal components of the prostate will result in enlargement of the gland
 - Ratio of stroma: epithelial, normal = 2:1; BPH = 5:1
 - Commonly occurs in central zone of prostate
- Hormones
 - Dihydrotestosterone [DHT] (produced from testosterone by 5-alpha reductase) bind nuclear androgen receptors in stromal and epithelial cells, causing growth factor activation
 - Age-related increase in oestrogen levels increases the expression of dihydrotestosterone receptors on prostatic parenchymal cells
- Stem cell theory
 - Abnormal maturation and regulation of cell renewal process – increase in size of prostate due to decrease in cell death

3. Clinical features

- Obstructive symptoms: hesitancy, poor stream, terminal dribbling, incomplete voiding
- Irritative symptoms: frequency, nocturia
- Acute retention of urine / Chronic retention of urine (CRU)
- Haematuria
- Occasional palpable bladder

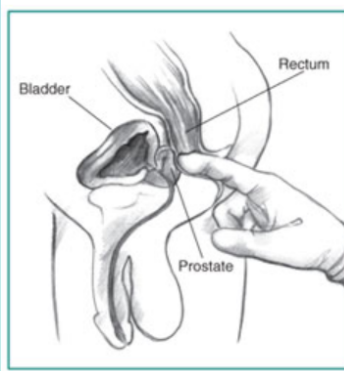
4. History

- Symptoms assessed using International Prostate Symptom Score (IPSS)

Patient Name: _____ Date of birth: _____ Date completed: _____		In the past month:					Your score	
	Not at all	Less than 1 or 2 times	Less than half the time	About half the time	More than half the time	Almost always		
1. Incomplete emptying How often have you had the sensation of not emptying your bladder?	0	1	2	3	4	5		
2. Frequency How often have you had to urinate less than every two hours?	0	1	2	3	4	5		
3. Intermittency How often have you found you stopped and started again several times when you urinated?	0	1	2	3	4	5		
4. Urgency How often have you found it difficult to postpone urination?	0	1	2	3	4	5		
5. Weak stream How often have you had a weak urinary stream?	0	1	2	3	4	5		
6. Straining How often have you had to strain to start urination?	0	1	2	3	4	5		
7. Nocturia How many times did you typically get up at night to urinate?	None	1 Time	2 Times	3 Times	4 Times	5 Times		
Total IPSS score								
Score	1-7: Mild	8-19: Moderate				20-35: Severe		
Quality of life due to urinary symptoms	Designated	Present	Moderately	Mixed	Moderately	Unhappy	Terrible	
If you were to spend the rest of your life with your urinary condition just the way it is now, how would you feel about that?	0	1	2	3	4	5	6	

5. Examination

- Mainly digital rectal examination (DRE)
 - Findings: finger does not reach upper limit of prostate, non-tender, rubbery, lobulated
 - Lateral lobes bulge into rectum divided by well-defined central sulcus rectal mucosa moves freely around the gland
 - Posterior aspect of the gland is palpable rectally and a median groove can usually be identified. Usually exaggerated in benign hypertrophy



6. Investigations

- Serum prostatic specific antigen (PSA)
 - >2.5 - 4 nmol-1, proceed with transrectal US and biopsy
- Urinary flow rate
 - <15ml/sec suggests obstruction
 - <10ml/sec is indicated for surgical intervention
- Blood
 - Hemoglobin, urea, glucose, ESR, renal function (serum urea, creatinine and electrolytes)
- Midstream urine
 - Culture and sensitivity for UTIs
- Cystoscopy
 - Exclude diverticulum, stone and growth

7. Management

- Medical
 - Lifestyle modifications
 - Limiting fluid intake, mild diuretics (caffeine, alcohol etc) or bladder irritants
 - Avoid constipation
 - Pharmacologic interventions
 - Alpha 1-adrenergic receptor blockers
 - Inhibits smooth muscle contraction in prostate
 - 5 alpha reductase inhibitors
 - Inhibits conversion of testosterone to DHT
 - Combination therapy with antimuscarinics
- Surgical
 - Transurethral resection of prostate (TURP)
 - Prostatectomy
 - Transurethrally
 - Retropubically (RPP)
 - Transvesical (TVP)
 - From perineum

