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2011-2015

BPH - LUTS

Crown Plaza Hotel

Dead Sea

2018 . April , 19 .

BPH
LUTS

* **Benign prostatic hyperplasia is a histological pattern characterized by proliferation of smooth muscle and epithelial cells within the prostatic transitional zone. This lead to prostatic enlargement.**

* **Lower urinary tract symptoms refer to storage and / or voiding disturbances.**

LUTS - BPH

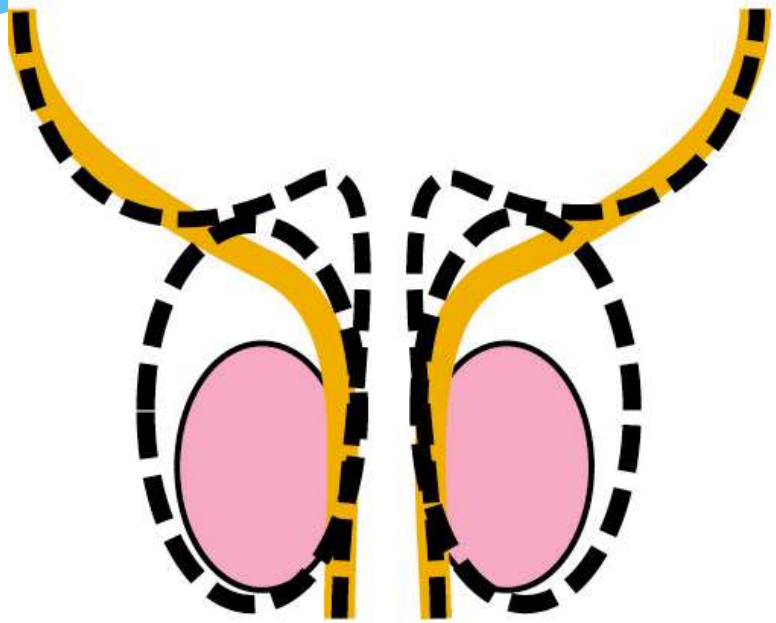
- **LUTS - BPH refers to bothersome lower urinary tract symptoms linked to the prostate.**

- **Not all men with BPH have LUTS and not all patients with LUTS have BPH.**

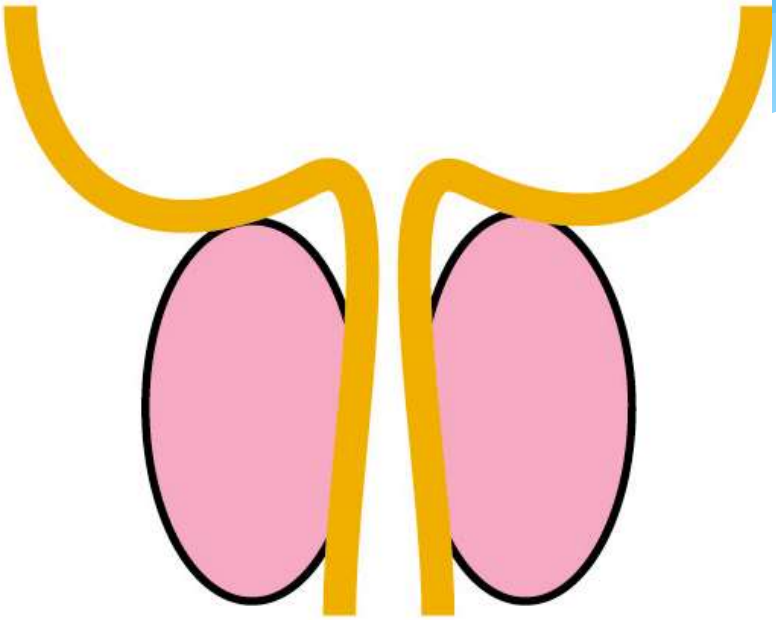
Benign Prostatic Hyperplasia (BPH):

* **What do we know ?**

BPH is an abnormal increase in the number of prostatic cells:



Normal

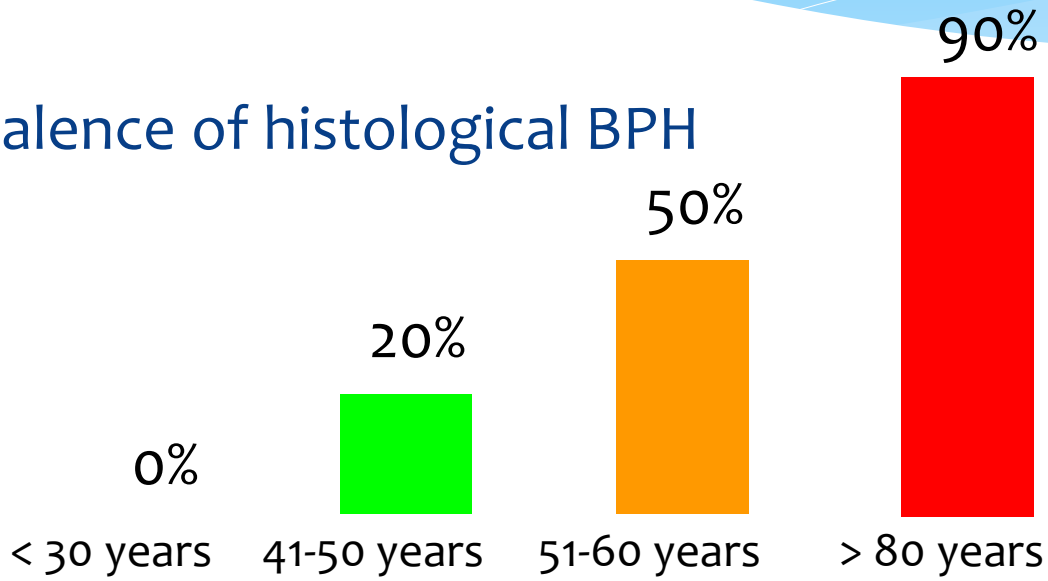


Hyperplastic

Result : enlarged prostate.

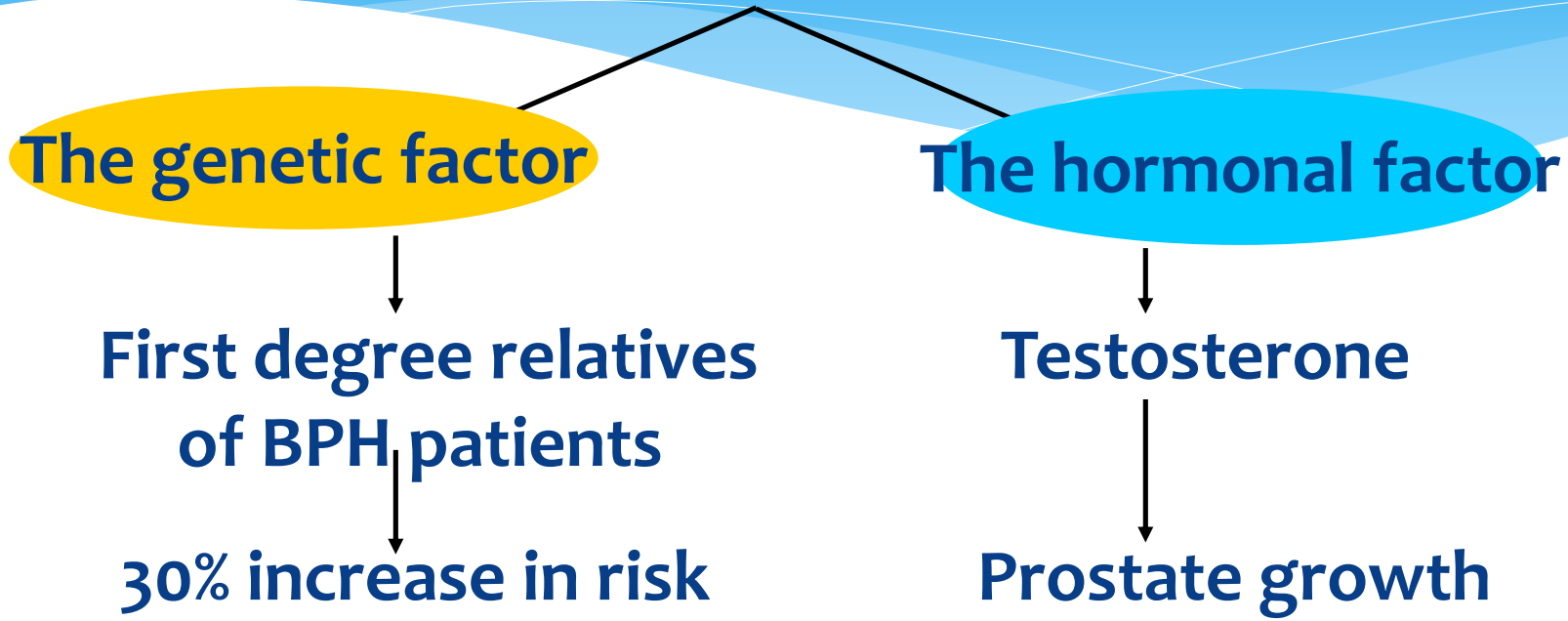
BPH is a very frequent condition in ageing men:

* Prevalence of histological BPH



The most common benign tumour.

Factors that may lead to BPH:



Bladder Outlet Obstruction (BOO)

How does it occur ?

The 2 components of BOO:

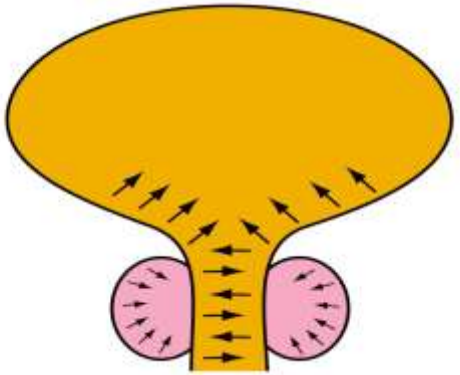
Static Component

Normal

Hyperplastic

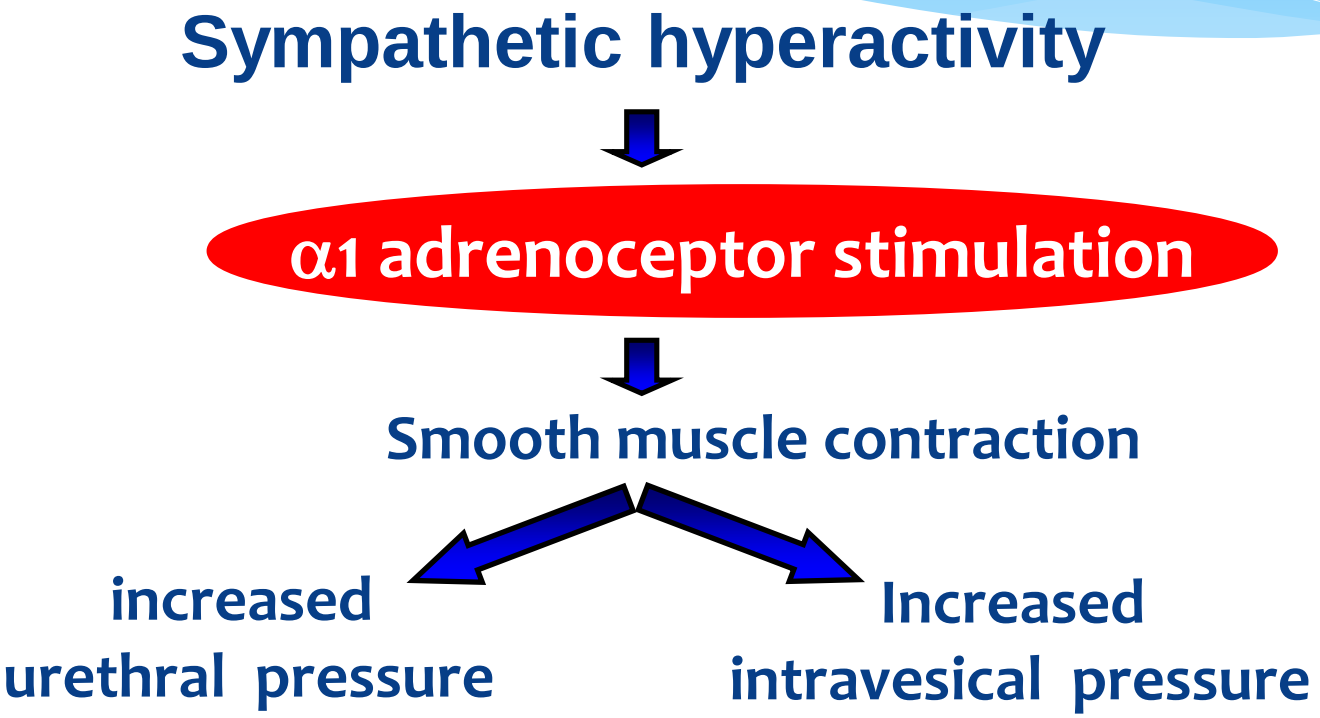
Increase in prostate volume

Dynamic Component



Increase in smooth muscle tone

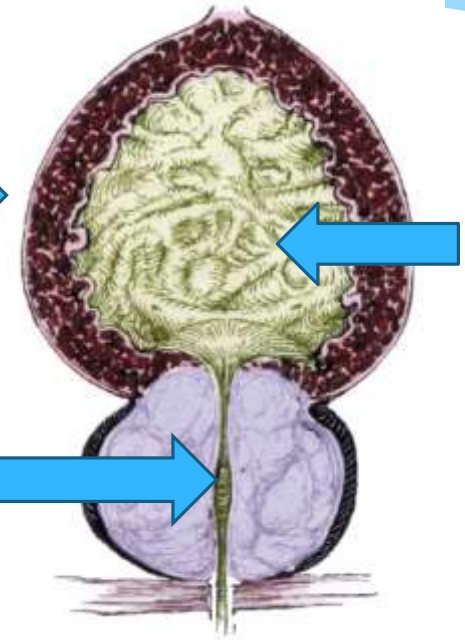
LUTS severity is not related to prostate size only :



Bladder Outlet Obstruction (BOO): Consequences

Thickened Bladder wall

Resistance to urine outflow



Increased intravesical pressure

The consequences of BOO:

Higher intravesical pressure

More stress on bladder musculature

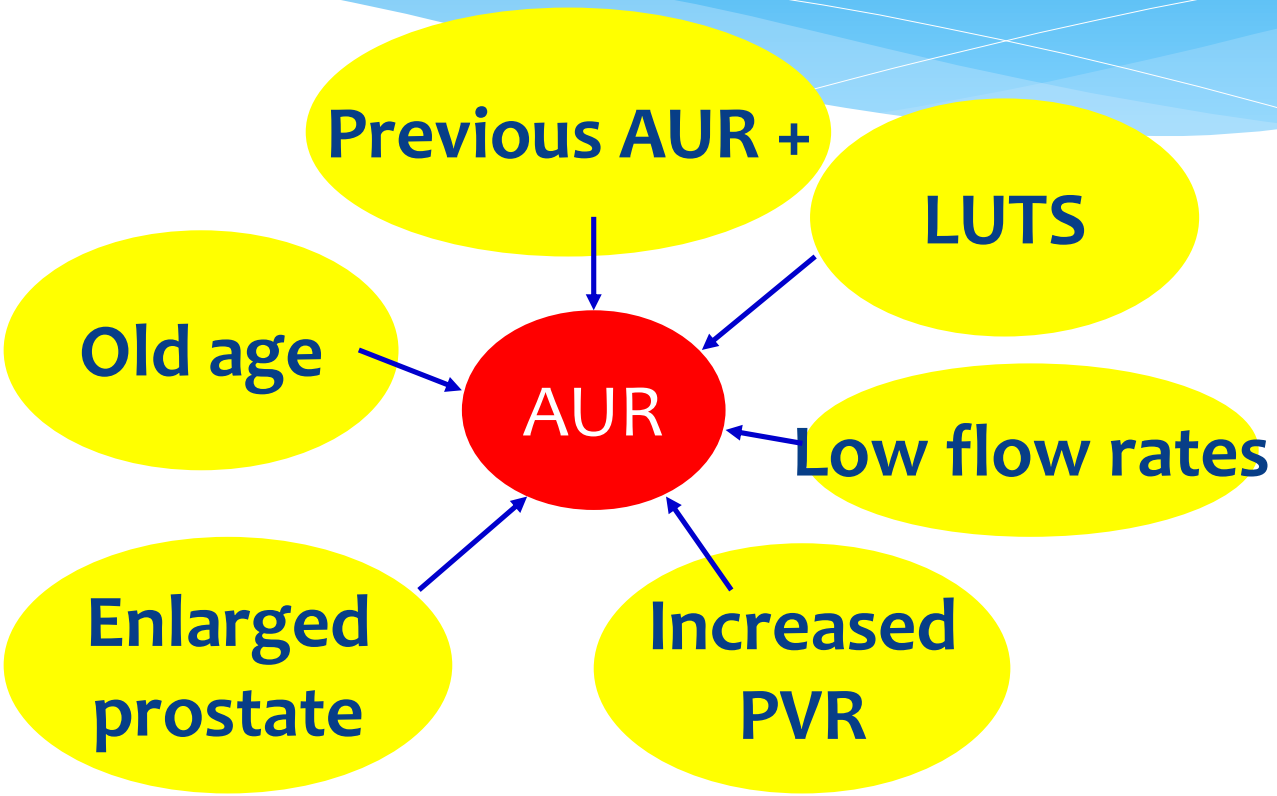
Decompensation of the detrusor muscle

Increased Post Void Residue (PVR)

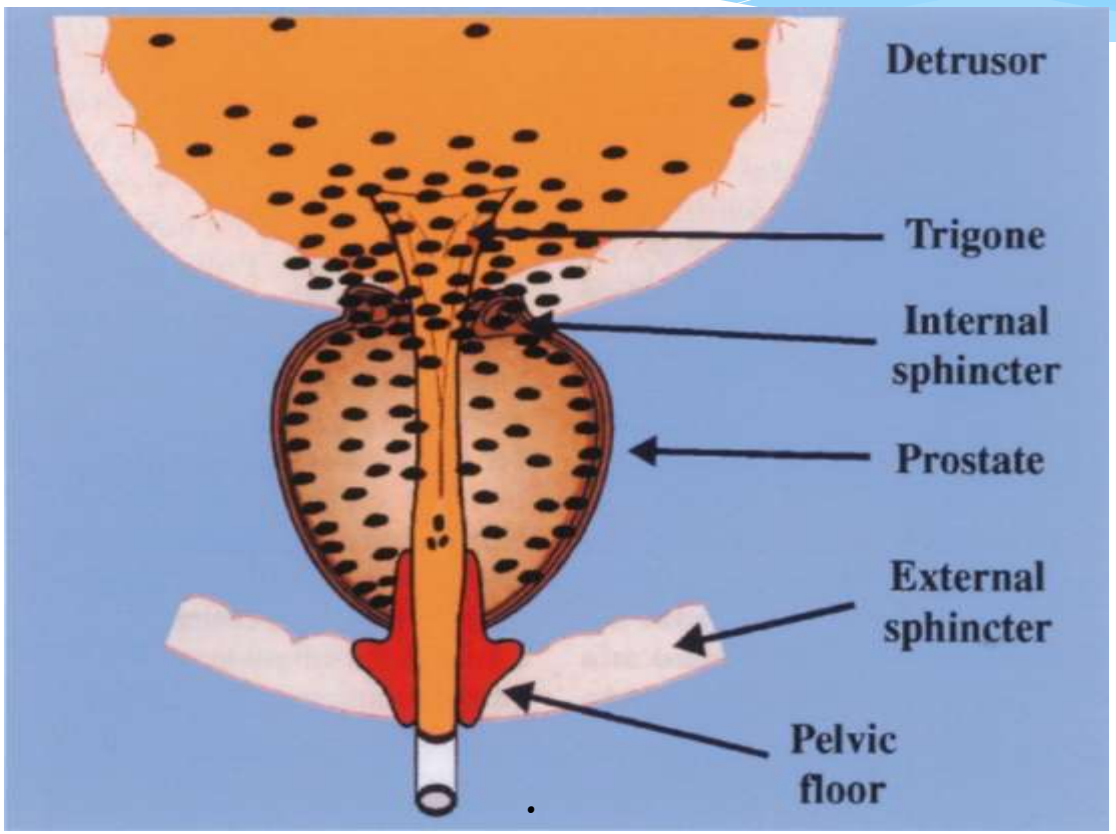
Retention (AUR)

* **Acute urinary retention (AUR) is an indication for surgery**

Risk factors for AUR:

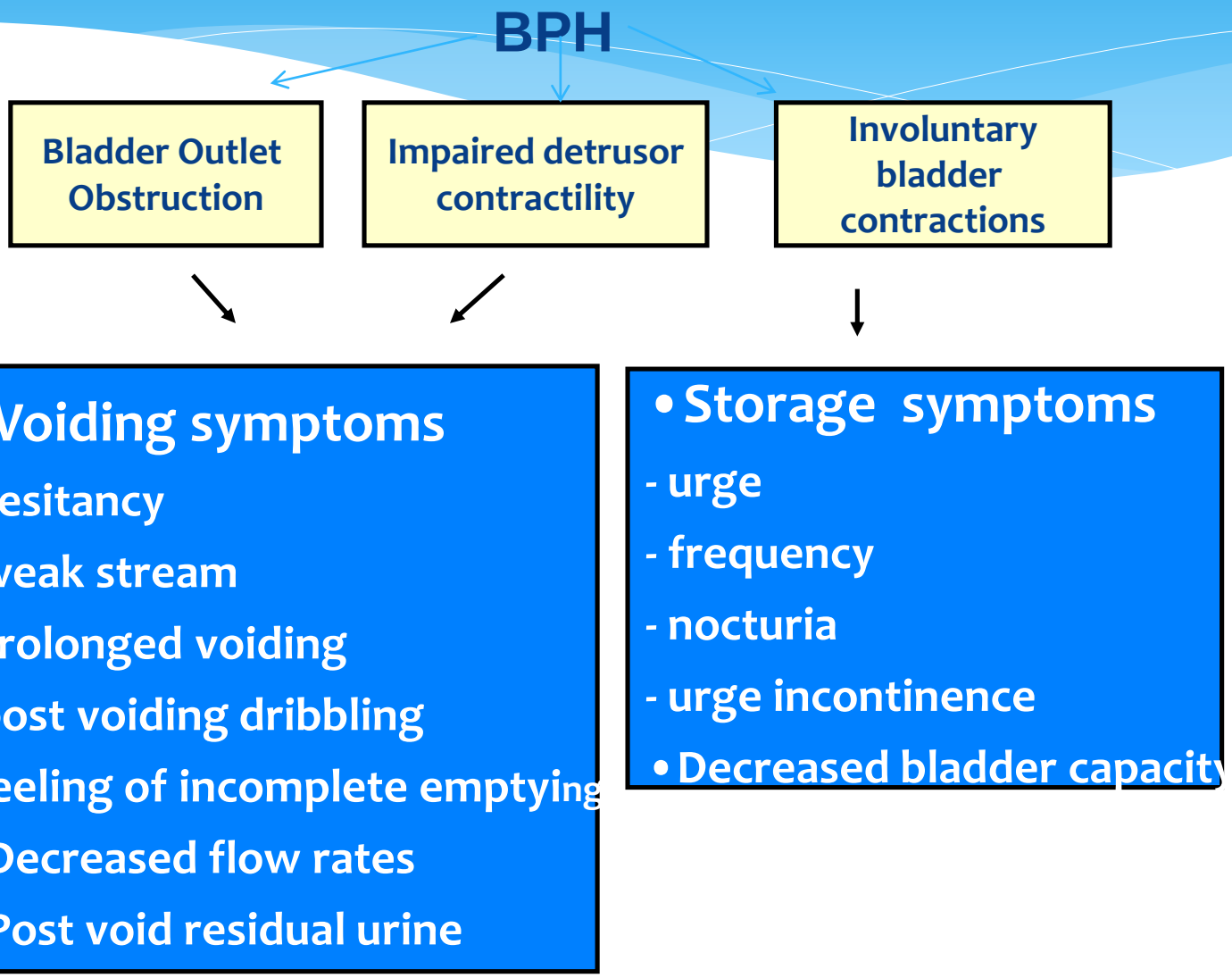


Main sites of α1-receptors within the urinary tract



* The clinical manifastations of BPH

The Lower Urinary Tract Symptoms (LUTS):



BPH has a significant inpact on Quality of Life (QoL)

- 75% of BPH patients have disturbed life .
- 31% of BPH patients report some sort of sexual dysfunction .

Diagnosis

Detailed evaluation is A MUST !

1. Medical history.
2. Physical examination.
3. Urinalysis.
4. Symptom assessment.

Medical history

1. Special attention on genital organs and urinary tract.
2. Family history of prostatic diseases.
3. Sexual function / dysfunction
4. Current medications.
5. General condition (if surgery is to be considered)
6. Life style (smoking , alcohol , fatty food) .

Physical examination

1. General examination

2. Digital Rectal Examination
   (DRE) to assess the prostate and rectum as well

Urinalysis

Standard examination to detect

- Haematuria
- Proteinuria
- Pyuria
- Other

4-5% of men with microscopic haematuria will be found to have a cancer or other urological disease within the first 3 years following the test.

The I-PSS - symptom assessment

The I-PSS is based on the answers to 7 questions concerning urinary symptoms.
Each question is assigned points from 0 to 5 indicating increasing severity.
The total score can therefore range from 0 to 35 (asymptomatic to very symptomatic).

Mild symptoms	0-7
Moderate symptoms	8-19
Severe symptoms	20-35

International prostate symptom score:

Over the past month, how often have you….	None at all	Less than 20% of time	Less than half the time	About half the time	More than half the time	Almost always
had a sensation of not emptying your bladder completely after urinating?	0	1	2	3	4	5
had to urinate again less than 2 hours after urinating?	0	1	2	3	4	5
stopped and started again several times when you urinated?	0	1	2	3	4	5
found it difficult to postpone urination?	0	1	2	3	4	5
had a weak urinary stream?	0	1	2	3	4	5
had to push or strain to urinate?	0	1	2	3	4	5
Over the past month,……	None	1 time	2 times	3 times	4 times	5 times or more
how many times did you most typically get up to urinate from the time you went to bed at night until you got up in the morning?	0	1	2	3	4	5

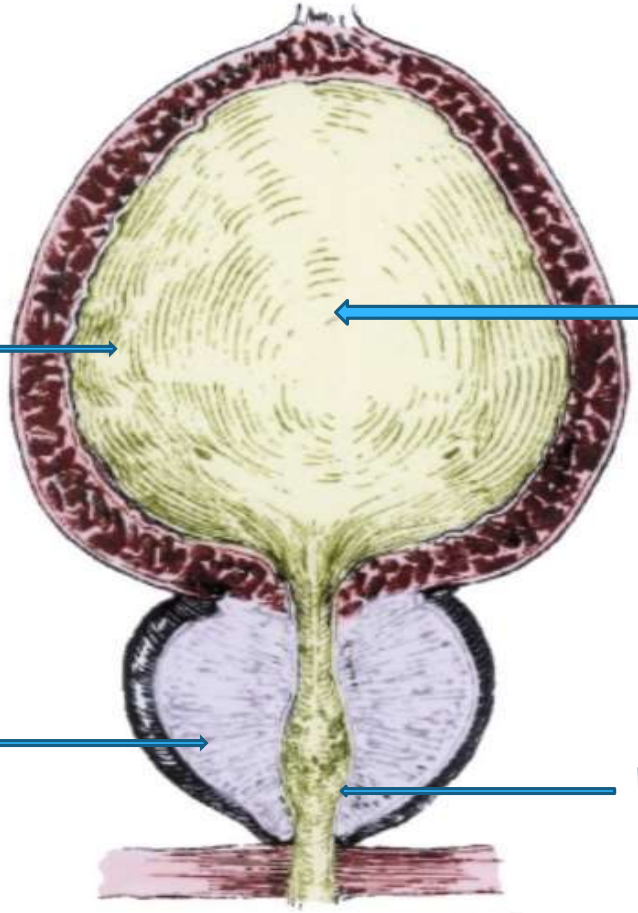
AUA QoL questionaire

QoL DUE TO URINARY SYMPTOMS	DELIGHTED	PLEASED	MOSTLY SATISFIED	MIXED	MOSTLY DISSATISFIED	UNHAPPY	TERRIBLE
IF YOU WERE TO SPEND YOUR LIFE WITH YOUR URINARY CONDITION JUST THE WAY IT IS NOW , HOW WOULD YOU FEEL ?	0	1	2	3	4	5	6

OTHER RECOMMENDED TESTS

* **Creatinine → Kidney function**
* **Prostate Cancer → PSA**
* **Uroflowmetry → Flow rate**
* **Ultrasound → PVR**
* **Voiding diary → Other symptoms**

Other causes of LUTS



Infections and tumours of the Bladder

Functional problems of the detrusor

Infections of the prostate

Urethral stricture

Risk factors

* Obesity.
* Lack of physical activity.
* Erectile dysfunction.
* Ageing .
* Family history of BPH.

Complications

* Urinary retention.
* Renal insufficiency.
* Recurrent UTI.
* Gross hematuria.
* Bladder calculi.
* Renal failure or Uremia.

Management of BPH

Treatment objectives :

* **To provide rapid and sustained relief of symptoms**
* **To prevent long term complications**
* **To improve the QOL of patients**

Note :

BPH patients do not always require treatment !

Treatment options

* **Watchful waiting**
* **Drug treatment**
* **Surgery**

Watchful waiting (WW)

Suitable for mild – to – moderate uncomplicated LUTS :

- **Education**
- **Re – assurance**
- **Lifestyle advice**
- **Periodic monitoring**

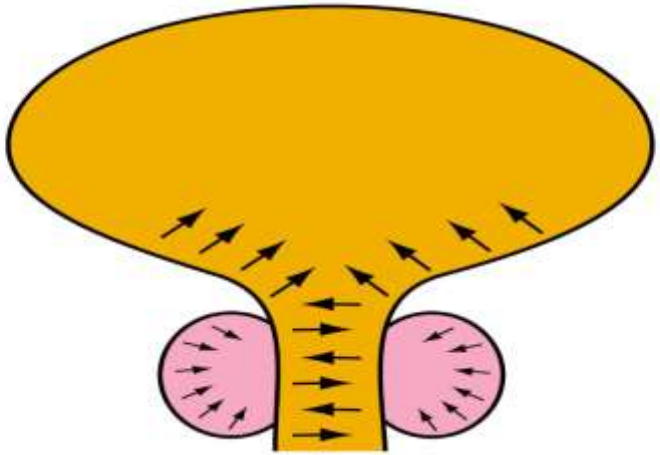
Drug treatments

* α -1 - adrenoceptor antagonists (α-1 - blockers)
* 5 α – reductase inhibitors
* Muscarinic receptor antagonists
* Plant extracts (phytotherapy)
* Desmopressin
* Combination therapies :
    1. α 1 – blocker + 5 α – reductase inhibitor
    2. α 1 – blocker + muscarinic receptor antagonist
* Phosphodiesterase (PDE) 5 inhibitors

α -1- Blockers

* **Often first – line drug treatment .**
* **Rapid onset of action and good efficacy .**
* **Alfuzosin , doxazosin , tamsulosin , terazosin , Silodosin .**
* **All have similar efficacy but better with smaller prostates (< 40 ml) .**
* **Efficacy is maintained over at least 4 years .**
* **Commonest side effects : asthenia , dizziness orthostatic hypotension , retrograde ejaculation .**

α-blockers act on the dynamic component of BOO:



They reduce the sympathetic tone of the prostate and the urethra.

What does uroselectivity mean?

* **Uroselectivity is the capacity to achieve more local than systemic effects:**

- **Uroselective α-blockers mainly have effect on BOO**
- **Non-uroselective α-blockers also have an effect on blood pressure**

Benefits of α-blockers in BPH

* 20-30 % increase in flow rates .
* 20-50 % improvement in symptoms .
* Improved QoL .

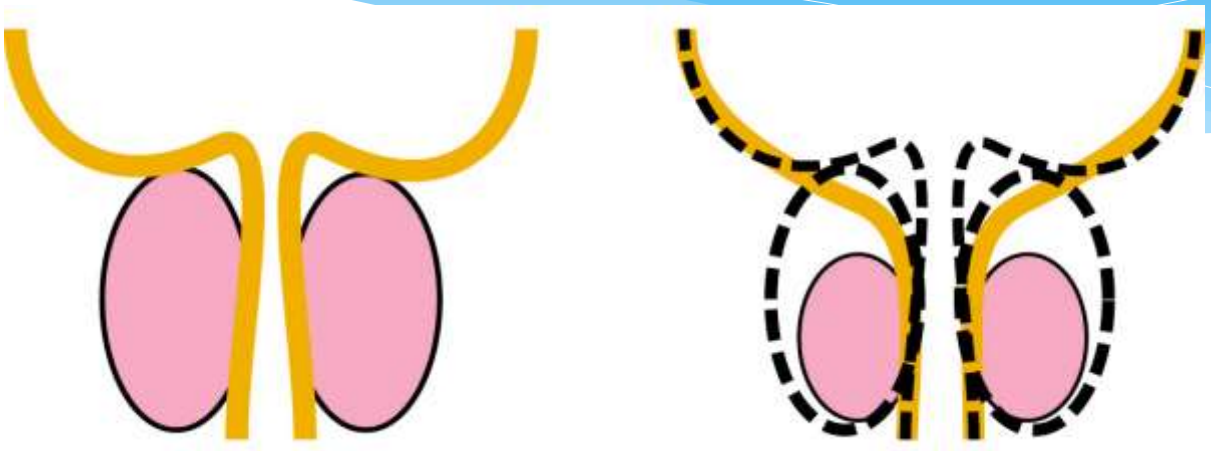
5 α – reductase inhibitors

* **Should only be considered in men with bothersome moderate – to – severe LUTS and prostate volume > 40 ml or elevated PSA concentration (> 1.5 ng/l) .**

* **Suitable for long-term treatment only (over many years) because of their slow onset of action**

* **Dutasteride and finasteride are both effective .**

5α-reductase inhibitors act on the static component of BOO:



They reduce the size of the prostate by 20-25% through inhibiting the conversion of Testosterone to DHT .

* 5 α – reductase inhibitors reduce LUTS more slowly than α 1 – blockers and in finasteride , less effectively .
* The greater the baseline prostate volume (or serum PSA concentration) , the faster and more pronounced the symptomatic benefits of dutasteride .
* 5 α – reductase inhibitors , but not α 1- blockers , reduce the long-term (> 1 year) risk of acute urinary retention or need for surgery

* **The most relevant side effects include reduced libido ， ED and ejaculation disorder.**

* **About 1-2 % of patients develop breast enlargement with breast or nipple tenderness ．**

Muscarinic receptor antagonists

* May benefit men with smaller PSA levels (smaller prostates) .
* Tolterodine and other antimuscarinic agents significantly reduced urgency incontinence daytime or 24 hour frequency and urgency – related voiding compared to placebo .
* Muscarinic receptor antagonists are generally well tolerated .

Muscarinic receptor antagonists

* **Adverse effects : dry mouth , constipation , micturition difficulties , nasopharyngitis and dizziness .**
* **Antimuscarinic drugs , especially in men with BPO should be prescribed with caution , and regular re-evaluations of IPSS and PVR are advised .**

Plant extracts (phytotherapy)

* No specific recommendation can be made
* Their use is based on empirical observation of their clinical benefits

Desmopressin

* Synthetic analouge of the antidiuretic hormone .
* Used to treat nocturia due to nocturnal polyuria in adults .
* The most frequent adverse events are : headache , nausea , diarrhoea , abdominal pain , dizziness , dry mouth and hyponatremia (serum sodium concentration < 130 mmol/l).
* The risk of hyponatremia increases with age , lower sodium concentration at baseline and higher basal 24-hour urine volume per bodyweight .

Combination therapies

* **α 1- blockers + 5 α – reductase inhibitor : best prescribed long term (>12 months) to men with moderate – to –severe LUTS at risk of disease progression (e.g. higher prostate volume , higher PSA concentration , advanced age) .**

* **Combination treatment is better than monotherapy at reducing symptoms and improving Qmax , and better than α 1-blockers at reducing the risk of acute urinary retention and the need for surgery.**

* **The α 1-blocker maybe discontinued after 6 months in men with moderate LUTS at baseline, but longer- term combination therapy is beneficial in severe LUTS .**

α 1 – blocker + muscarinic receptor antagonist :

* More efficacious in reducing voiding frequency , nocturia or IPSS than α 1 – blockers or placebo alone
* Combination treatment significantly reduced urgency urinary incontinence episodes and urgency and increased QOL .

* Persistent LUTS during α 1 – blocker treatment can be reduced by the addition of a **muscarinic receptor antagonist** (tolterodine) especially if there is **detrusor overactivity** .
* **PVR measurement** is recommended during combination treatment to assess increased PVR / urinary retention **!**

Phosphodiesterase (PDE) 5-inhibitors

Only Tadalafil is approved in patients with or without erectile dysfunction.

Treatment response

Drug class	Time to improvement
Alpha blockers	2-4 weeks
5. Alpha reductase inhibitors	At least 6 months
PDE – 5 inhibitors	4 weeks

Surgical treatments : indications

:

* Recurrent urinary retention
* Over flow incontinence
* Recurrent UTI
* Bladder stones or diverticula
* Hematuria due to BPH/BPE
* Dilatation of the upper urinary tract due to BPO
* Insufficient relief in LUTS or PVR after conservative or medical treatment .

Surgical interventions

* **Transurethral resection (TURP) or transurethral incision of the prostate (TUIP) .**
* **Open prostatectomy .**
* **Transurethral microwave therapy (TUMT).**
* **Transurethral needle ablation (TUNA) .**

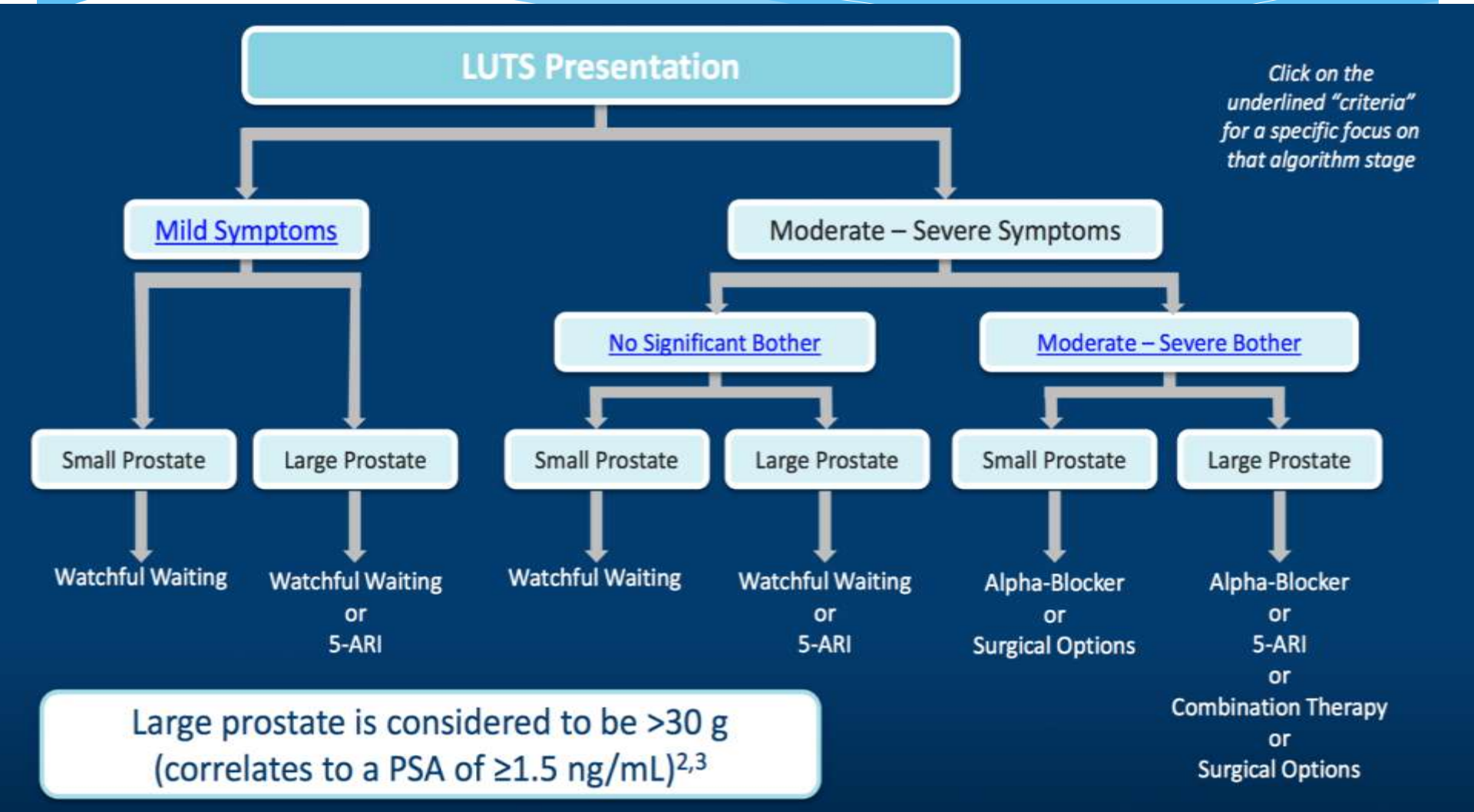
* Holmium laser enucleation (HoLEP) or Holmium laser resection of the prostate (HoLRP) .
* Laser vaporisation of prostate (KTP , “Greenlight”) .
* Prostate stents .
* Ethanol or botulinum toxin injections .

Novel approaches

* Gene therapy
* COX-2/ LOX-5 inhibitors
* Vit D3 analogue
* Antibody dendrimer conjugates
* Oxytocin antagonists
* Radio nucleotide therapy

Take home massage

Treatment flow chart



Thank you for being with us tonight .

Please enjoy your stay .