IN THE NAME OF GOD

BPH what will happened

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DHT binds to androgen receptors in the cell nuclei, potentially resulting in BPH.

However, the fact that serum testosterone levels decrease with age, yet the development of BPH increases, suggests that other agents play an etiologic role. Possible factors include the metabolic syndrome, hyperinsulinemia, norepinephrine, angiotensin II, and insulin-like growth factors.

In vitro studies have shown that large numbers of alpha-1-adrenergic receptors are located in the smooth muscle of the stroma and capsule of the prostate, as well as in the bladder neck. Stimulation of these receptors causes an increase in smooth-muscle tone, which can worsen LUTS.

The bladder may gradually weaken and lose the ability to empty completely, leading to increased residual urine volume and, possibly, acute or chronic urinary retention.

In the bladder, obstruction leads to smooth-muscle-cell hypertrophy. Biopsy specimens of trabeculated bladders demonstrate evidence of scarce smooth-muscle fibers with an increase in collagen. The collagen fibers limit compliance, leading to higher bladder pressures upon filling.

The collagen fibers limit compliance, leading to higher bladder pressures upon filling. In addition, their presence limits shortening of adjacent smooth muscle cells, leading to impaired emptying and the development of residual urine

The prostatic urethra is a conduit for semen and prevents retrograde ejaculation (ie, ejaculation resulting in semen being forced backwards into the bladder) by closing off the bladder neck during sexual climax. Ejaculation involves a coordinated contraction of many different components, including the smooth muscles of the seminal vesicles, vasa deferentia, ejaculatory ducts, and the ischiocavernosus and bulbocavernosus muscles.

The prevalence of BPH in white and African-American men is similar. However, BPH tends to be more severe and progressive in African-American men, possibly because of the higher testosterone levels, 5-alpha-reductase activity, androgen receptor expression, and growth factor activity in this population. The increased activity leads to an increased rate of prostatic hyperplasia and subsequent enlargement and its sequelae.

Patient Education

Patients should be informed that the following lifestyle changes may help relieve symptoms of BPH:

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- Avoid alcohol and caffeine
- Avoid drinking fluids at bedtime; drink smaller amounts throughout the day
- Avoid taking decongestant and antihistamine medications
- Get regular exercise
- Make a habit of going to the bathroom when they have the urge
- Practice double voiding (empty the bladder, wait a moment, then try again)
- Practice stress management and relaxation techniques

Patients should be warned that if they become unable to urinate, they are at risk for permanent kidney or bladder injury and need to go to a hospital emergency department

The digital rectal examination (DRE) is an integral part of the evaluation in men with presumed BPH. During this portion of the examination, prostate size and contour can be assessed, nodules can be evaluated, and areas suggestive of malignancy can be detected.

Decreased anal sphincter tone or the lack of a bulbocavernosus muscle reflex may indicate an underlying neurological disorder.

For example, one can report the prostate size as "2-3 fingerbreadths wide" when charting in the medical record or communicating with a colleague. Most asymptomatic men have glands of 2 fingerbreadths or less.

In the patients with hypertension which candidate to operation for BPH an evaluation about prevalence of the taking an angiotensin converting inhibitor will be carried out for research if they have, how long?

. Anecdotally, each fingerbreadth correlates to approximately 15–20 g of tissue. The normal prostate volume in a young man is approximately 20 g

Complications

Complications related to bladder outlet obstruction (BOO) secondary to BPH include the following:

- Urinary retention
- Renal insufficiency
- Recurrent urinary tract infections
- Gross hematuria
- Bladder calculi
- Renal failure or uremia (rare in current practice)

- Flow rate - Useful in the initial assessment and to help determine the patient’s response to treatment

- PVR urine volume – Used to gauge the severity of bladder de compensation; it can be obtained invasively with a catheter or noninvasively with a transabdominal ultrasonic scanner

- Cytologic examination of the urine – May be considered in patients with predominantly irritative voiding symptoms

- Pressure-flow studies - Findings may prove useful for evaluating for BOO
- Urodynamic studies - To help distinguish poor bladder contraction ability (detrusor underactivity) from BOO

Management

Pharmacologic treatment

Agents used in the treatment of BPH include the following:

- Alpha-adrenergic receptor blockers
- 5-alpha reductase inhibitors
- Phosphodiesterase-5 enzyme inhibitors
- Anticholinergic agents

Benign prostatic hyperplasia (BPH)
, also known as benign prostatic hypertrophy, is a histologic diagnosis characterized by proliferation of the cellular elements of the prostate.

Cellular accumulation and gland enlargement may result from epithelial and stromal proliferation, impaired preprogrammed cell death (apoptosis), or both.

BPH involves the stromal and epithelial elements of the prostate arising in the periurethral and transition zones of the gland . The hyperplasia presumably results in enlargement of the prostate that may restrict the flow of urine from the bladder.

BPH is considered a normal part of the aging process in men and is hormonally dependent on testosterone and dihydrotestosterone (DHT) production.

An estimated 50% of men demonstrate histopathologic BPH by age 60 years, and it will be 90percent in 85 years old it means nealy all of them

Approximately half of men diagnosed with histopathologic BPH report moderate-to-severe LUTS.

The risk of AUR and the need for corrective surgery increases with age.

invasive therapies to accomplish the goal of TURP while avoiding its adverse effects .

THE Prostatic urethera therefore it is a conduit between the bladder and the urethra.

The current American Cancer Society (ACS) guideline for early detection of prostate cancer stresses the importance of involving men in the decision whether to test for prostate cancer. [7] The ACS notes that PSA testing may reduce the likelihood of dying from prostate cancer but poses serious risks, particularly of treatment of prostate cancer that would not have caused ill effects if left undetected.

After this discussion, if the patient wishes to proceed with screening (ie, prostate-specific antigen [PSA] testing and digital rectal examination [DRE] for prostate cancer), the ACS recommends that screening start at the following ages:

- Age 50 years in men at average risk for prostate cancer who are expected to live at least 10 more years
- Age 45 years in men at high risk for prostate cancer (African Americans and men with a first-degree relative diagnosed with prostate cancer before age 65)
- Age 40 years in men at very high risk (those with more than one first-degree relative who had prostate cancer at an early age).

A physician should discuss the risks and benefits of PSA screening with the patient. Notably, men with larger prostates may have slightly higher PSA levels.

Electrolytes, BUN, and Creatinine

These evaluations are useful screening tools for chronic renal insufficiency in patients who have high post-void residual (PVR) urine volumes. A routine serum creatinine measurement is not indicated in the initial evaluation of men with lower urinary tract symptoms (LUTS) secondary to BPH. [1]

Urine flow rate measurement is useful in the initial assessment and to help determine the response to treatment. It may be performed prior to embarking on any active treatments, including medical treatment.
A maximal flow rate (Qmax) is the single best measurement, but a low Qmax does not help differentiate between obstruction and poor bladder contractility.

A Qmax value of greater than 15 mL/s is considered by many to be normal. A value of less than 7 mL/s is widely accepted as low.

The results of flow rate measurements are somewhat effort- and volume-dependent. Therefore, the best plan to make a reasonable determination of significance is to obtain at least 2 tracings with at least 150 mL of voided volume each time.

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Benign prostatic hyperplasia: Case report of a 17-year-old

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Mild or nonbothersome symptoms do not require treatment. Bothersome symptoms are managed with lifestyle modifications, medications, and surgery. Alpha blockers are first-line medications for BPH. Surgical referral is indicated if BPH-related complications develop, medical therapy fails, or the patient chooses it. Dietary supplements, such as saw palmetto, pygeum, cernilton, and beta sitosterols, and acupuncture are not recommended for the management of BPH.

The early phase of benign prostatic hyperplasia growth (men between 31 and 50 years old) is characterized by a doubling time for the tumor weight of 4.5 years. In the mid phase of benign prostatic hyperplasia growth (men between 51 and 70 years old) the doubling time is 10 years, and increases to more than 100 years in patients beyond 70 years old

Finasteride inhibits 5-alpha reductase type II, whereas dutasteride inhibits both type I and type II. There is no demonstrable clinical difference between the two. Side effects of both medications include gynecomastia, impotence, and decreased libido and ejaculate volume.

Introduced in 2008, the Fit fOR The Aged (FORTA) classification is a system created to assist physicians in the screening process for harmful or inappropriate medications in older patients.

from class A to D, with A being “Absolutely,” B being “Beneficial,” C being “Caution,” and D being “Don’t or Avoid” for men over 65 years old based on available research information. In the FORTA classification system for medications in older adults, silodosin and tamsulosin were labeled “Caution.” These alpha blockers were placed in this category because there was no data on efficacy and safety in older adults.

Additionally, there are risks of hypotension, especially in the setting of other anti-hypertensive medications. FORTA also labeled alfuzosin, doxazosin, and terazosin as “Avoid” secondary to the increased risk for orthostatic hypotension, syncope, vasodilatory effects, and cardiac arrhythmias.

In the FORTA classification system, both finasteride and dutasteride are “beneficial” in older persons as they are considered to be efficacious and have no geriatrically adverse effects for the elderly male

However, there is growing concern that there may be more long-term risk of taking these medications than was originally thought. As 5-ARIs reduce the synthesis of several neuroactive steroids, the modulation of the neuroendocrine stress response may lead to depression.

Phosphodiesterase inhibitors (PDE5I) are now approved for BPH in daily use along with their well-known approval for erectile dysfunction (ED). PDE5I works by blocking the breakdown of cGMP to GMP by phosphodiesterase. The prostate contains PDE 4, 5, and 11, and cross-reactivity from PDE5I leads to vasodilation and improvement in LUTS.

. Side effects from PDE5-I include headaches, flushing, and dyspepsia. In patients taking nitrates, PDE5I are contraindicated as they might potentiate the effect of nitrates and cause life-threatening hypotension.

here was also a concern with the use of PDE5-I as there was a higher rate of diarrhea and dizziness in men older than 75.[9] Due to its cardiovascular contraindications, tadalafil is rated as “Caution” in the FORTA classification.

Fesoterodine (Toviaz), an anticholinergic with a high affinity for M3 receptors, which are predominantly found in the bladder, was the only medication in this class to receive a "Beneficial" FORTA classification

The other anticholinergics, solifenacin (Vesicare), darifenacin (Enablex), and tolteridine (Detrol), were rated as FORTA classification “Caution” because of their cardiovascular effects (heat intolerance, increased heart rate, and decreased ability to sweat) and potential adverse effect on cognitive function.

THANKS