



Prescribing Practices in Urologic Conditions

Jennifer Lewis DNP, APRN-CNP, CUNP

Clinical Assistant Professor

OUHS Fran & Earl Ziegler College of Nursing

Relevant Financial Disclosure(s)

Jennifer Lewis DNP, APRN-CNP

- I have nothing to disclose.



Objectives

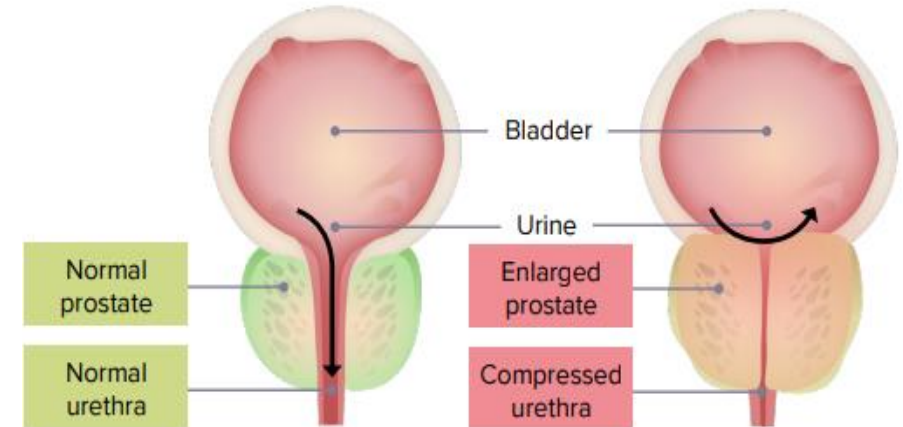


- Common urologic conditions
 - Benign Prostatic Hypertrophy/hyperplasia (BPH)
 - Overactive bladder & incontinence (OAB & UI)
 - Erectile dysfunction (ED)
 - Hypogonadism
 - Male Infertility
 - Renal stones
- Pharmacologic treatments of urologic conditions

Benign Prostatic Hypertrophy (BPH)



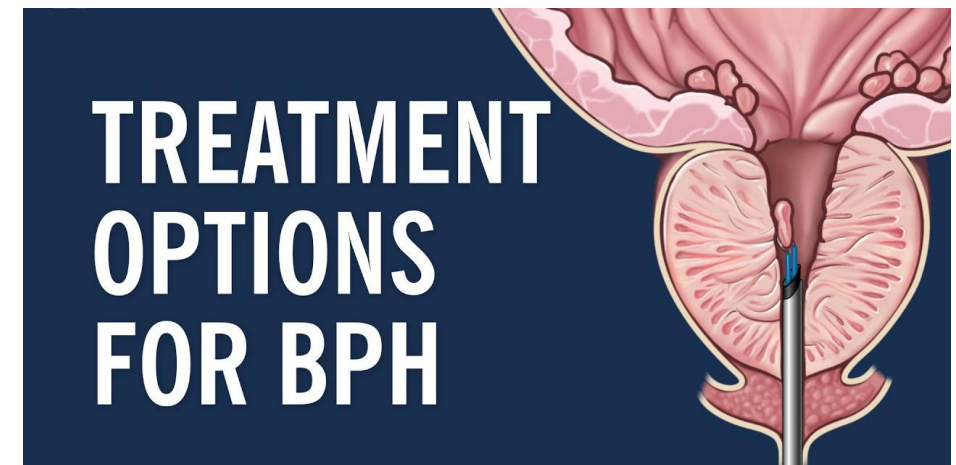
- Non-malignant growth of prostate
- 50-60% in 60s and 70-80% in 80s
- Genetics, metabolic syndrome and obesity, testosterone replacement
- Lower urinary tract symptoms (LUTS)



BPH Medication Management



- α -1 adrenergic antagonist (alpha blockers)
 - Tamsulosin, alfuzosin, terazosin, doxazosin, silodosin (osins)
 - Relaxes smooth muscle in prostate, urethra, bladder neck
 - Helps with *dynamic* obstruction
- 5- α -reductase inhibitors (5ARIs)
 - Finasteride or dutasteride
 - Shrinks prostate epithelial tissue
 - Best for *mechanical* obstruction
- Phosphodiesterase Type 5 inhibitor (PDE5i)
 - Tadalafil
 - Similar to alpha blockers; smooth muscle relaxation



Overactive Bladder (OAB) & Urinary Incontinence (UI)



- OAB typically symptoms not a disease
- Urgency, frequency, nocturia, with(out) UI
- Voiding diary review
- First line therapy
 - Behavior modifications
 - Dietary and lifestyle changes
 - Avoidance of constipation
 - Pelvic floor PT



OAB & UI Medication Management



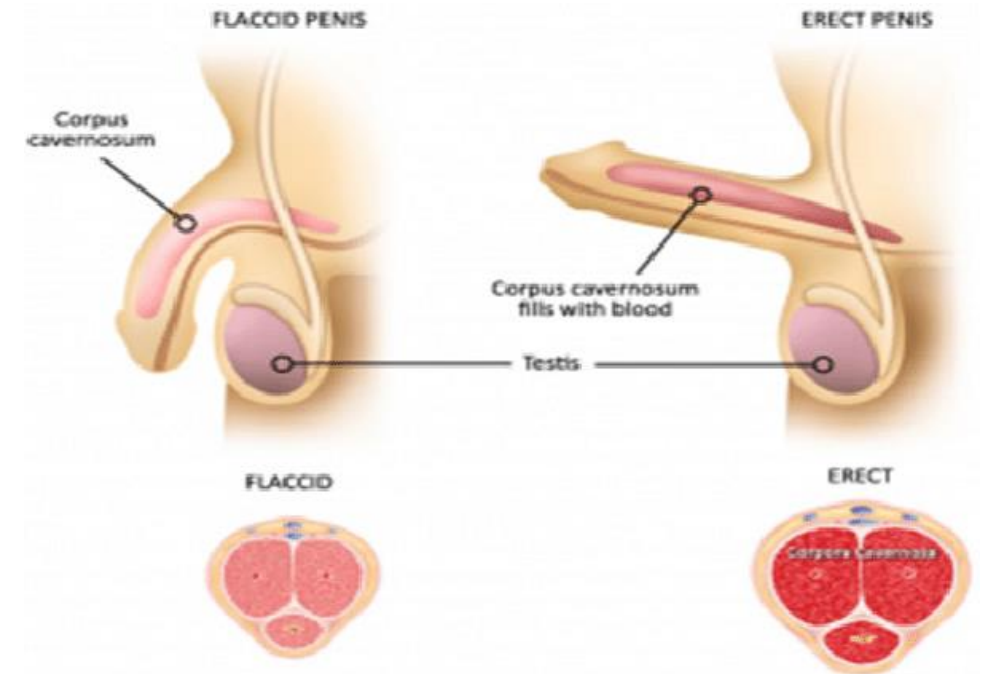
- Anti-muscarinics/anticholinergics
 - Oxybutynin, tolterodine, festoterodine, trospium, solifenacin, darifenacin
- β_3 -adrenoceptor agonists
 - Mirabegron, vibegron
- Bowel regimen
 - Stool softener
 - Miralax
 - Suppositories or enemas



Erectile Dysfunction (ED)



- Inability or difficulty achieving, maintaining or both; penile rigidity sufficient for satisfactory sexual performance
- Increases with age and comorbidities
- *CVD major contributor
- Heart healthy lifestyle = men's health
- Psychological "performance anxiety"



ED Medication Management



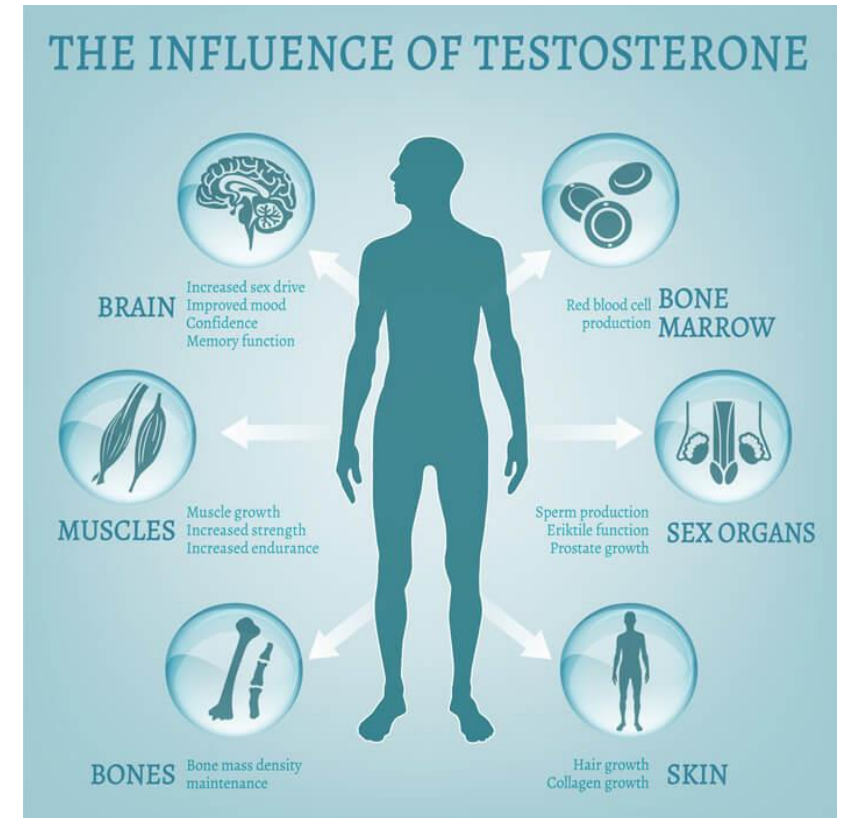
- Treatment of underlying contributing disease (DM, HTN, CVD)
 - Meds as prescribed
- Resolve contributing hypogonadism (if present)
 - TRT or endocrine Rx, HCG etc. (if reproductive age)
- Psychological stressors may need multidisciplinary approach
 - Antianxiety or other Rx
- phosphodiesterase type 5 inhibitor (PDE5i)
 - Sildenafil, vardenafil, tadalafil, avandafil
 - PRN & some daily dosing option
 - More effective with empty stomach



Hypogonadism



- Hypogonadism (Low T)
 - <math><300\text{ng/dL}</math>
 - Decreased function of testis
 - T deficiency
 - Affects cognitive, sexual and other body function/development in men
- Primary and Secondary etiologies
- May be asymptomatic with low levels
- May be symptomatic with normal levels





Hypogonadism Medication Management

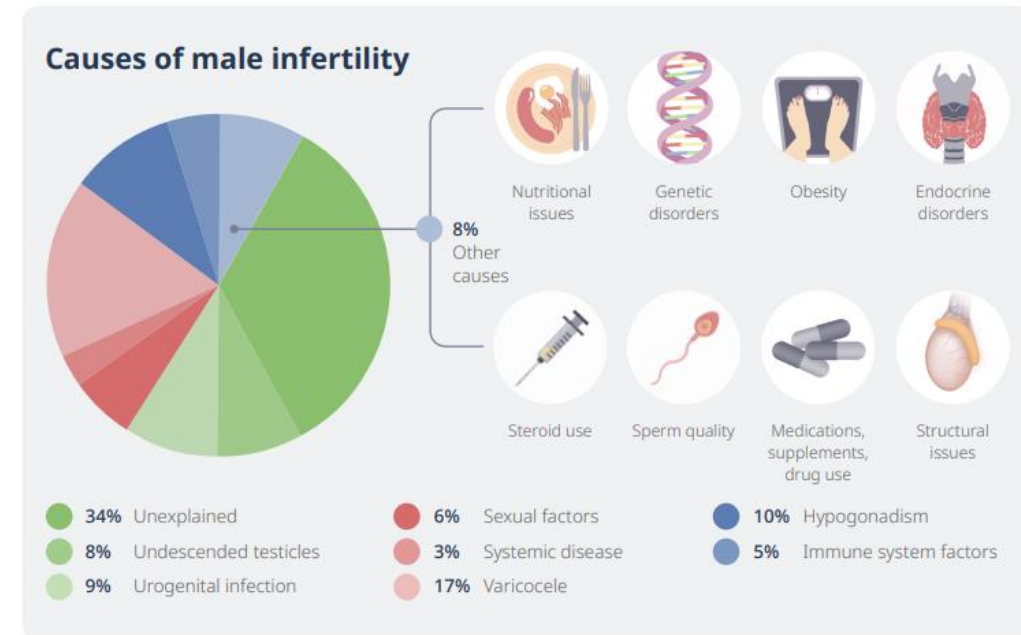
- Lifestyle modifications and augmentation of current Rx
- Goal: 300-800ng/dL
- Exogenous Testosterone
 - Many routes,
- Promotion of Endogenous testosterone production
- Safety and efficacy monitoring



Male Infertility



- Defined as unable to achieve spontaneous pregnancy after 1 year of unprotected, regular intercourse
- 20% if males primary cause and 30-40% combined partners
- Usually Multifactorial
 - Genetics, endocrine, comorbidities, medications/lifestyle, prior exogenous T use
- Structural
 - Varicocele
 - Obstruction of ejaculatory duct
 - Retrograde ejaculation or anejaculation



Male Infertility Medication Management



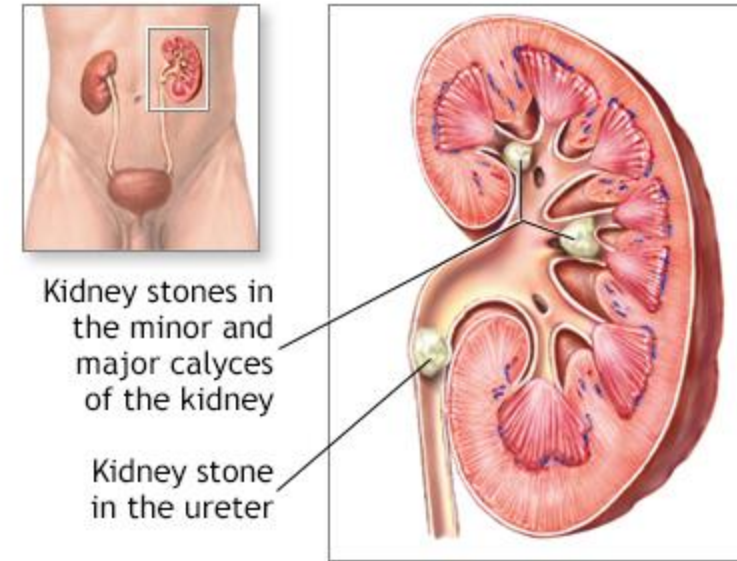
- Multifactorial
 - Corrective factors of comorbid conditions
 - Treat HTN, DM, obesity, drugs, lifestyle
 - Stop exogenous T!!! (may be reversible)
- hCG (human chorionic gonadotropin)
 - Promote endogenous T production
- Clomiphene or aromatase inhibitors
 - Decrease estradiol (improve T:E ratio)
- Pseudoephedrine
 - Promote antegrade ejaculation at bladder neck
- Supplements/Vitamins
 - L-carnitine, CoQ10, folic acid, zinc, selenium, MTV



Nephrolithiasis



- Renal and ureteral stones
 - Hard accumulation/deposit of minerals
- With(out) obstruction
 - Asymptomatic
 - Symptomatic
 - Hydronephrosis
 - Urgency, dysuria, nausea, vomiting, infection, several colicky pain, hematuria, +/- fever
- Primary etiology
 - Low water intake = low urine output
 - Diet
 - Too much sodium, animal protein
 - NOT CALCIUM issue
 - High oxalate intake
- Bowel conditions
 - Gastric bypass
 - Crohn's/Ulcerative colitis
- Hyperparathyroidism
- Family history & Obesity



Calcium Stone



Uric Acid Stone



Struvite Stone



Cysteine Stone

ADAM.

Nephrolithiasis Medication Management



- Dependent on stone composition & metabolic evaluation
- Tamsulosin (alpha blockers)
 - Relaxes urothelium for passage
- Pain management
 - During stone event
- Other medications {PREVENTION}
- Thiazide diuretics
 - For hypercalciuria
- Potassium citrate
 - Increase citrate levels, increases alkalinity of urine, dissolution of uric acid stones
- Allopurinol
 - Hyperuricemia
- Acetohydroxamic acid (AHA)
 - Costly, used in infectious stones



References



- Burnett AL, Nehra A, Breau RH et al: Erectile dysfunction: AUA guideline. J Urol 2018; **200**: 633.
- Huang SA, Lie JD. Phosphodiesterase-5 (PDE5) Inhibitors In the Management of Erectile Dysfunction. P T. 2013 Jul;38(7):407-19. PMID: 24049429; PMCID: PMC3776492.
- Kumar P, Kumar N, Thakur DS, Patidar A. Male hypogonadism: Symptoms and treatment. J Adv Pharm Technol Res. 2010 Jul;1(3):297-301. doi: 10.4103/0110-5558.72420. PMID: 22247861; PMCID: PMC3255409.
- Lecturio. (2024). Cheat Sheets. Retrieved from <https://ounursing.lecturio.com/> on March 4, 2024.
- Leslie SW, Soon-Sutton TL, Khan MAB. Male Infertility. [Updated 2023 Mar 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2024 Jan-. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK562258/>
- Lightner DJ, Gomelsky A, Souter L et al: Diagnosis and treatment of overactive bladder (non-neurogenic) in adults: AUA/SUFU Guideline amendment 2019. J Urol 2019; **202**: 558.
- Sandhu JS, Bixler BR, Dahm P, et al. Management of lower urinary tract symptoms attributed to benign prostatic hyperplasia (BPH): AUA Guideline amendment 2023. J Urol. 2023;10.1097/JU.0000000000003698. <https://doi.org/10.1097/JU.0000000000003698>
- Urology Care Foundation. (2024). What are Kidney Stones?; What is Low Testosterone? Retrieved on March 4, 2024, from <https://www.urologyhealth.org/urology-a-z/k/kidney-stones>.



Questions?

Contact Information: Jennifer-lewis@ouhsc.edu