AUA 2026
Washington, DC
MAY 15-18

034IC - Case-Based Approach to Understanding the AUA/Sexual Medicine Society of North America Sexual Medicine Guidelines

Saturday, May 16

Faculty

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Alan Shindel, MD

Case-Based Approach to Understanding the AUA/Sexual Medicine Society of North America Sexual Medicine Guidelines

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Alan Shindel, MD, MAS
Landon Trost, MD

SMSNA/AUA Guidelines

Year	Guideline
2015	Peyronie's Disease Guidelines
2018	Erectile Dysfunction Guidelines
2018	Testosterone Guidelines
2021	Disorders of Ejaculation Guidelines
2022	Priapism Guidelines

American Urological Association (AUA) Guideline

PEYRONIE'S DISEASE: AUA GUIDELINE

Ajay Nehra, Ralph Alterowitz, Daniel J. Culkin, Martha M. Faraday, Lawrence S. Hakim, Joel J. Heidelbaugh, Mohit Khera, Kevin T. McVary, Martin M. Miner, Christian J. Nelson, Hossein Sadeghi-Nejad, Allen D. Seftel, Alan W. Shindel, and Arthur L. Burnett

Hossein Sadeghi-Nejad MD FACS
Professor of Urology & Ob-Gyn
Director of Men's Health

NYU Grossman School of Medicine

ERECTILE DYSFUNCTION: AUA GUIDELINE

Arthur L. Burnett, MD; Ajay Nehra, MD; Rodney H. Breau, MD; Daniel J. Culkin, MD; Martha M. Faraday, PhD; Lawrence S. Hakim, MD; Joel Heidelbaugh, MD; Mohit Khera, MD; Kevin T. McVary, MD; Martin M. Miner, MD; Christian J. Nelson, PhD; Hossein Sadeghi-Nejad, MD; Allen D. Seftel, MD; Alan W. Shindel, MD

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EVALUATION AND MANAGEMENT OF TESTOSTERONE DEFICIENCY: AUA GUIDELINE

John P. Mulhall, MD; Landon W. Trost, MD; Robert E. Brannigan, MD; Emily G. Kurtz, MD; J. Bruce Redmon, MD; Kelly A. Chiles, MD MSc; Deborah J. Lightner, MD; Martin M. Miner, MD; M. Hassan Murad, MD, MPH; Christian J. Nelson, PhD; Elizabeth A. Platz, ScD, MPH; Lakshmi V. Ramanathan, PhD; Ronald W. Lewis, MD

Landon Trost, MD

Secretary, SMSNA

Founder, Male Fertility and Peyronie's Clinic

Brigham Young University

Provo, UT

Disorders of Ejaculation: An AUA/SMSNA Guideline

Alan W. Shindel,[1,*] Stanley E. Althof,[2] Serge Carrier,[3] Roger Chou,[4,5] Chris G. McMahon,[6] John P. Mulhall,[7] Darius A. Paduch,[8] Alexander W. Pastuszak,[9] David Rowland,[10] Ashley H. Tapscott[11] and Ira D. Sharlip[1]

Alan Shindel MD, MAS

Professor of Urology

Associate Program Director

Chair, AUA Core Curriculum Committee

University of California San Francisco

The Diagnosis and Management of Priapism: an AUA/SMSNA Guideline (2022)

Trinity J. Bivalacqua; MD PhD; Bryant K. Allen, MD; Gerald B. Brock, MD; Gregory A. Broderick, MD; Roger Chou, MD; Tobias S. Kohler, MD; John P. Mulhall, MD; Jeff Oristaglio, PhD; Leila L. Rahimi, MHS; Zora R. Rogers, MD; Ryan P. Terlecki, MD; Landon Trost, MD; Faysal A. Yafi, MD; Nelson E. Bennett, Jr., MD

Trinity J. Bivalacqua, MD, PhD

Professor of Urology

Director, Urologic Oncology

Co-Director, Genitourinary Cancer Service Line, Abramson Cancer Center

University of Pennsylvania

Agenda

Time	Guideline	Speaker
4:00 – 4:05 pm	Introduction	Dr. Mohit Khera
4:05 – 4:20 pm	Peyronie's Disease	Dr. Hossein Sadeghi
4:20 – 4:35 pm	Erectile Dysfunction	Dr. Arthur Burnett
4:35 – 4:45 pm	Q and A	
4:45 – 5:00 pm	Hypogonadism	Dr. Landon Trost
5:00 – 5:15 pm	Disorders of Ejaculation	Dr. Alan Shindel
5:15 – 5:25 pm	Q and A	
5:25 – 5:40 pm	Priapism Guidelines	Dr. Trinity Bivalacqua
5:40 – 5:55 pm	Q and A for entire panel	
5:55 – 6:00 pm	Closing remarks	Dr. Mohit Khera

Methodology

- Literature searches included Ovid Medline In-Process & Other Non-Indexed Citations, Ovid MEDLINE, Ovid EMBASE, Ovid Cochrane Central Register of Controlled Trials, Ovid Cochrane Database of Systematic Reviews, and Scopus
- Body of evidence for a particular treatment was assigned a strength rating of A (high), B (moderate), or C (low)
- Evidence-based statements of Strong, Moderate, or Conditional Recommendation were developed
- Additional information was provided as Clinical Principles and Expert Opinions when insufficient evidence existed

	Evidence Strength A (High Certainty)	Evidence Strength B (Moderate Certainty)	Evidence Strength C (Low Certainty)
Strong Recommendation (Net benefit or harm substantial)	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is substantial Applies to most patients in most circumstances and future research is unlikely to change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is substantial Applies to most patients in most circumstances but better evidence could change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) appears substantial Applies to most patients in most circumstances but better evidence is likely to change confidence (rarely used to support a Strong Recommendation)
Moderate Recommendation (Net benefit or harm moderate)	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is moderate Applies to most patients in most circumstances and future research is unlikely to change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) is moderate Applies to most patients in most circumstances but better evidence could change confidence	Benefits > Risks/Burdens (or vice versa) Net benefit (or net harm) appears moderate Applies to most patients in most circumstances but better evidence is likely to change confidence
Conditional Recommendation (No apparent net benefit or harm)	Benefits = Risks/Burdens Best action depends on individual patient circumstances Future research unlikely to change confidence	Benefits = Risks/Burdens Best action appears to depend on individual patient circumstances Better evidence could change confidence	Balance between Benefits & Risks/Burdens unclear Alternative strategies may be equally reasonable Better evidence likely to change confidence
Clinical Principle	A statement about a component of clinical care that is widely agreed upon by urologists or other clinicians for which there may or may not be evidence in the medical literature		
Expert Opinion	A statement, achieved by consensus of the Panel, that is based on members' clinical training, experience, knowledge, and judgment for which there is no evidence		

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Peyronie's Disease AUA Guideline

Hossein Sadeghi-Nejad, MD, FACS
Professor of Surgery & Ob-Gyn
Director of Men's Health
NYU Langone Grossman School of Medicine

TODAY'S OBJECTIVE

→Review salient/ pertinent aspects of AUA Peyronie's Disease Guideline

→ Case-based presentations whenever possible

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TREATMENT OF ACTIVE PHASE – ORAL THERAPY

Clinicians **should not offer** oral therapy with:

- Vitamin E
- Tamoxifen
- Procarbazine
- Omega-3 fatty acids
- Combination of Vitamin E with L-carnitine

→ **No convincing evidence** for efficacy of these listed therapies

TREATMENT OF ACTIVE PHASE – ORAL THERAPY

- Clinicians may offer **oral non-steroidal anti-inflammatory** medications to the patient suffering from active Peyronie's disease who needs pain management (Expert Opinion)

- Patient pain level can be assessed with **visual analog scale** and managed with oral non-steroidal anti-inflammatory agents

- Pain level should be periodically reassessed to measure treatment efficacy

DIAGNOSIS

Clinicians should:

- **Engage in diagnostic process** to document Peyronie's Disease signs / symptoms. Minimum requirements: Careful history (to assess penile deformity, interference with intercourse, penile pain, and/or distress) and physical exam of the genitalia (to assess for palpable abnormalities of the penis) (Clinical Principle)
- **Elicit patient's history of penile symptoms**, including onset, precipitating factors, duration, changes over time, prior treatments used and other conditions (e.g., ED) that may affect treatment options
- **Examine patient's genitalia** including stretching and palpation of the flaccid penis and documentation of circumcision status and any anomalies (e.g., hypospadias)

DIAGNOSIS

- Clinicians should **perform an in-office intracavernosal injection** (ICI) test with or without duplex Doppler ultrasound prior to invasive intervention (Expert Opinion)

  → ICI test enables assessment of penile deformity, plaque(s), and pain in the erect state

- When the ICI test is **combined with duplex ultrasound**, additional measurements of plaque size and/or density can be made, calcified and non-calcified plaques can be differentiated, and information on the vascular integrity of the penis can be obtained

CASE 1

66-year-old male with 2-year h/o BPH, ED, Peyronie's

→ Long h/o male hypogonadism, kidney stones

- Male hypogonadism is treated by his endocrinologist
- Kidney stones: no pain at present
- Renal us: no stones
- Stones treated in past with ESWL

CASE 1

66-year-old male with 2-year h/o BPH, ED, Peyronie's

→ Long h/o male hypogonadism, kidney stones

- BPH: Patient has minimal BPH symptoms
- AUA IPSS score is 4. Patient remains on daily Cialis 5mg, no side effects
- ED AUA Shim score is 22 while using Viagra, 100 mg
- Peyronie's: has a curve, no pain

CASE 1

66-year-old male with 2-year h/o BPH, ED, Peyronie's

→ Long h/o male hypogonadism, kidney stones
→ Peyronie's: has a curve, no pain

Do you:

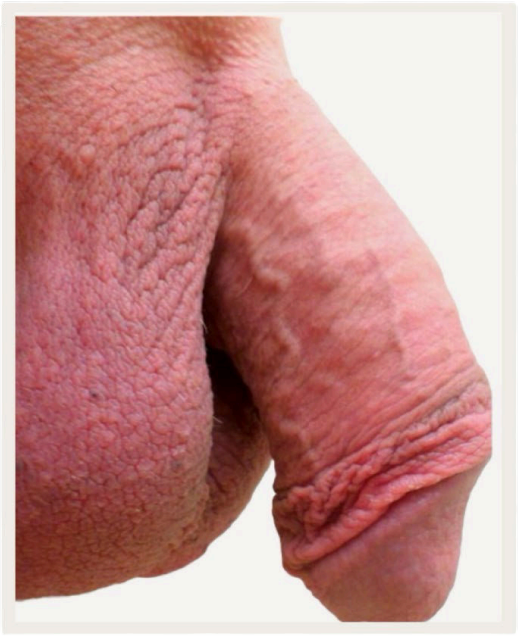
1) See Peyronie's disease patients in your practice?
2) Treat Peyronie's disease patients in your practice?
3) Currently perform intracavernosal testing in the office for Peyronie's?
4) Perform recommend penile duplex ultrasound for patients w/ Peyronie's?

CASE 1

66-year-old male with 2-year h/o BPH, ED, Peyronie's

→ Long h/o male hypogonadism, kidney stones
→ Peyronie's: has a curve, no pain

- Penile measurements obtained. Injection of 5 mcg PGE1 given. This was into the left corpus cavernosum
- Reasonable erection at about 5-10 min with 30º leftward curve
- Could not palpate a plaque at site of the lateral curvature. Perhaps there was a plaque dorsally



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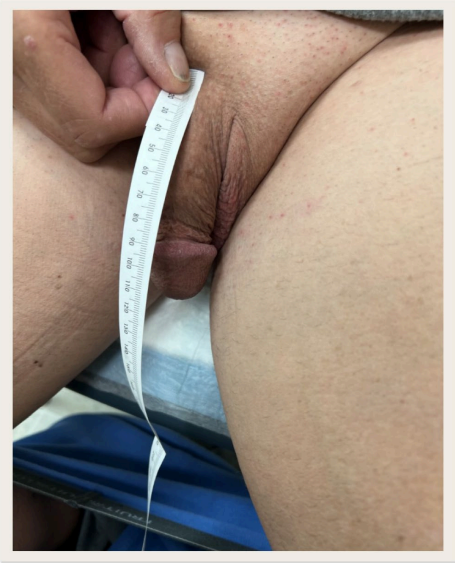
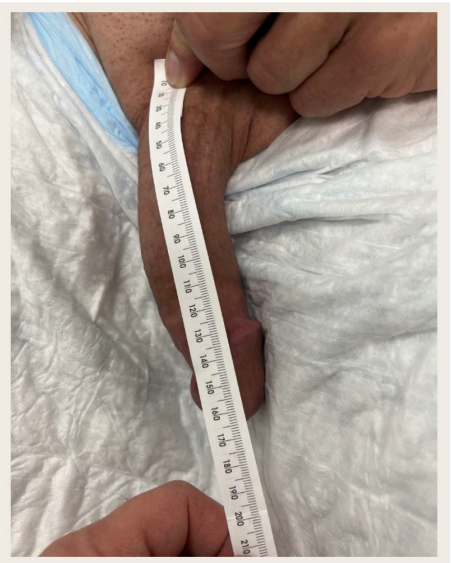
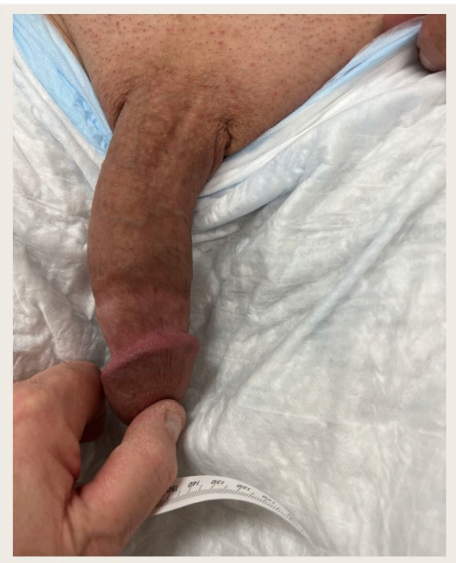
CASE 1







Flaccid state: dorsal body wall to mid-glans 10-11 cm

→ After injection of 5mcg PGE1 15-16 cm

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CASE 1

66-year-old male with 2-year h/o BPH, ED, Peyronie's

→ Long h/o male hypogonadism, kidney stones
→ Peyronie's: has a curve, no pain

Treatment Options

1. Penile plication
2. Penile prosthesis
3. Traction device
4. Penile xiaflex

PLICATION

- **Tunical plication** is the most common surgical strategy to treat PD patients: around **50% of all surgeries** conducted on PD patients who undergo reconstruction
- Most commonly-reported outcome was **curvature improvement** post-surgery, which occurred in most studies at 90% or higher rate
- Because plication surgery is not a treatment for ED and because the consequences of plication surgery on erectile function remain unclear, the most **appropriate candidates** for plication surgery are patients with intact erectile function or with ED responsive to oral medications or vacuum pump therapy or ICI therapy

PLICATION

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PENILE PROSTHESIS

- Clinicians may offer **penile prosthesis surgery** to patients with PD with erectile dysfunction and/or penile deformity sufficient to prevent coitus despite pharmacotherapy and/or vacuum device therapy (Moderate recommendation; Evidence Strength Grade C)
- Clinicians may perform **adjunctive intraoperative procedures**, (e.g., modeling, plication or incision/grafting) when significant penile deformity persists after insertion of the penile prosthesis (Moderate recommendation; Evidence Strength Grade C)
- Clinicians should use **inflatable penile prosthesis** for patients undergoing penile prosthetic surgery for the treatment of PD (Expert Opinion)

INTRALESIONAL INTERFERON A-2B

- Clinicians may administer **intralesional interferon α-2b** in patients with PD (Moderate Recommendati Evidence S gth Grade C)
- One multicenter RCT e is y Hellstrom et al.12 and Kendirci et al.13) required PD sympt and curvature of 30°+, administering patients 5 MU interferon α-2 s for 12 weeks vs. placebo. Curvature, plaque size, penile pain, ere nd hemodynamics were measured at baseline and completion. nt improvements:
  - **curvature reduction** 1 bo=4.5°)
  - **plaque size reduction** (erferon=2.6 2, placebo=0.9 cm2)
  - **penile pain resolution** (interferon=67.7%, placebo=28.1%)
  - Penile duplex Doppler ultrasound also revealed large improvements in **peak systolic velocity and mean resistive index** in interferon group, but not placebo

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GUIDELINE STATEMENT 8

Clinicians may administer intralesional collagenase clostridium histolyticum combination with modeling by the clinician and by the patient for the reduction of penile curvature in patients with stable Peyronie's disease, penile curvature ≥30° and ≤90° and intact erectile function (with or without the use of medications)

(Moderate Recommendation; Evidence Strength Grade B)

Clinical Efficacy, Safety and Tolerability of Collagenase Clostridium Histolyticum for the Treatment of Peyronie Disease in 2 Large Double-Blind, Randomized, Placebo Controlled Phase 3 Studies

Martin Gelbard,*,† Irwin Goldstein,‡ Wayne J. G. Hellstrom,§ Chris G. McMahon,‡ Ted Smith,‡ James Tursi,‡ Nigel Jones,‡ Gregory J. Kaufman‡ and Culley C. Carson III‡

Two Multicenter Randomized, Double Blind, Placebo Controlled Studies - USA and Australia (IMPRESS I & II)

Primary end points

Improvement (%) from baseline **penile curvature**

Change from baseline in PD symptom **bother** (PDQ)

THE JOURNAL OF UROLOGY® Vol. 190, 199-207, July 2013

IMPRESS I and II

- Intralesional Collagenase Plus Modeling; Follow up 7.5 mo

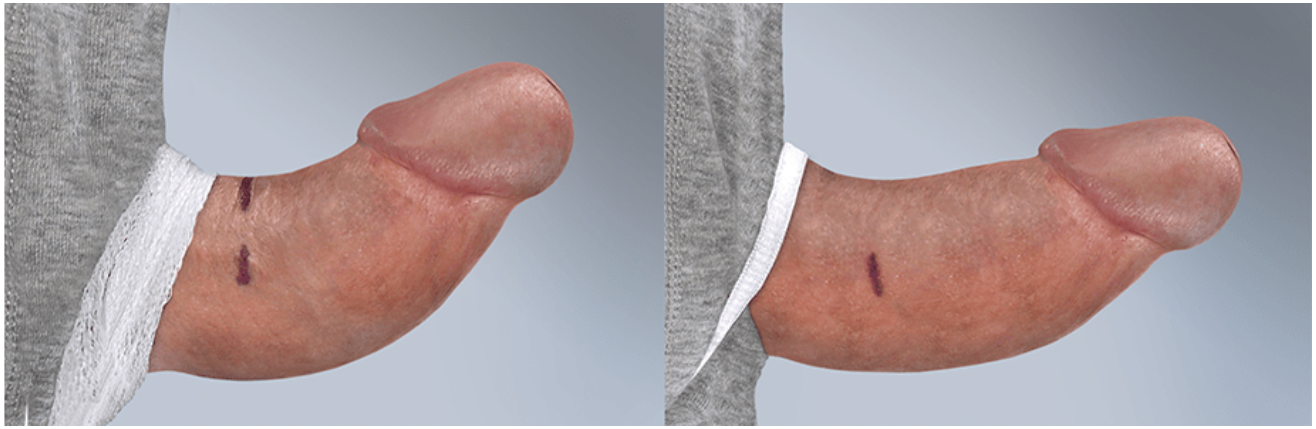
The definitive trials that lead to FDA approval
Up to 8 injections of 10,000 U over 24 weeks
Clinician **modeled** the penis after each cycle
Patients were instructed to model at home 3 x day
Exclusion criteria more extensive than 2012 trial:

- Curvature <30º or >90º
- Isolated hourglass deformity without curvature
- Calcified plaque or curvature proximal to base
- ED unresponsive to PDE5 inhibitors
- Lack of PGE1 erection during measurement

IMPRESS I AND II

Subgroup	Change from baseline curvature	% change from baseline curvature
Collagenase + modeling (n=202)	**-17.0º**	**33% reduction**
Placebo + modeling (n=107)	-9.3º	18.2% reduction

Co-Primary Endpoint Result



Curvature: 33% change from baseline represented in the images

- Men with lesser degrees of deformity may have similar bother domain scores as those with more severe curvature deformity

Collagenase Considerations

Expected average curvature reduction is **17 degrees**

Average difference between collagenase and placebo was statistically significant but only 7.7º

IIEF overall satisfaction improvement by one point

Clinical Safety and Adverse Events

BJUI
BJU International
Sexual Medicine

Analysis of the clinical safety of intralesional injection of collagenase *Clostridium histolyticum* (CCH) for adults with Peyronie's disease (PD)

Culley C. Carson III, Hossein Sadeghi-Nejad*, James P. Tursi†, Ted M. Smith†, Gregory J. Kaufman†, Kimberly Gilbert† and Stanton C. Honig‡

GUIDELINE STATEMENT 9

Clinicians should counsel patients with Peyronie's disease prior to beginning treatment with intralesional collagenase regarding potential occurrence of adverse events, including penile ecchymosis, swelling, pain, and corporal rupture (Clinical Principle)

PENILE INTRALESIONAL VERAPAMIL VS. PENILE XIAFLEX

- Patients were randomized to receive **ILV or CCH injections** with penile remodeling
- 50 males were recruited and divided into ILV (n=25) and CCH (n=25) groups. The mean changes in penile curvature were -16.8 (standard deviation [SD] 7.65)º in ILV and -28.2 (SD 11.5)º in CCH groups ($p<0.01$)
- Patients in the **CCH group scored better** than the ILV group **on the PDQ psychosexual symptoms** (-2.14 vs. -2.9; $p<0.01$) and symptom bother score (-3.88 vs. -4.16; $p=0.08$). Minor treatment-related adverse events were more common in the CCH group.
- The overall **satisfaction rate** on a 5-point scale was **4.1 in ILV** and **4.5 in CCH** groups, and there was no statistically significant difference in the PGI-I scores between the 2 groups ($p=0.14$)

PENILE INTRALESIONAL VERAPAMIL VS. PENILE XIAFLEX

Conclusion:

→ **CCH therapy is more effective than ILV to treat a carefully selected group of males with PD**, with a reasonable safety profile and a higher high level of patient satisfaction rate in the short term

Chung E, Wang J. Intralesional collagenase *Clostridium histolyticum* vs. verapamil injections in males with Peyronie's Disease: A prospective, matched-pair, non-blinded, randomised clinical study comparing clinical outcomes and patient satisfaction rates. Investig Clin Urol. 2022 Sep;63(5):563-568. doi: 10.4111/icu.20220145. PMID: 36068002; PMCID: PMC9448666.

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EXTRACORPOREAL SHOCK WAVE THERAPY

- Clinicians should not use **extracorporeal shock wave therapy** (ESWT) for the reduction of penile curvature or plaque size (Moderate Recommendation; Evidence Strength Grade B)
- Clinicians may offer extracorporeal shock wave therapy (ESWT) to **improve penile pain** (Conditional Recommendation; Evidence Strength Grade B)

Hatzichristodoulou et al. and Palmieri et al. (2009) similarly reported mean pain score

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THANK YOU

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Erectile Dysfunction: Highlights from the 2018 AUA Guidelines

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Disclosures

Scientific Study and/or Consultant for Endo Pharmaceuticals, National Institutes of Health, Boston Scientific, Novartis
Health Publishing with Andrology, European Urology, Urology Times, International Urology and Nephrology , Urology Practice Journal

AUA Male Sexual Dysfunction Panel Members

Arthur Louis Burnett, II, MD (Co-Chair)
Ajay Nehra, MD (Co-Chair)
Rodney Breau, MD
Nicholas Condon
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Allen D. Seftel, MD
Alan W. Shindel, MD
Methodologist: Martha Faraday, PhD

Purpose

- The purpose of this guideline is to provide a clinical framework for the diagnosis and treatment of ED

- The strategies recommended in this document were derived from evidence-base processes and a multi-disciplinary panel (general urology, surgical urology, psychology, patient advocacy).

- The most effective approach for a particular patient is best determined by shared decision making by the individual clinician and patient in the context of that patient's history, values, and goals for treatment.

Erectile Dysfunction

- Erectile Dysfunction (ED) is defined as the consistent or recurrent inability to attain and/or maintain an erection sufficient for sexual satisfaction

- Erectile Dysfunction may be of an organic, psychogenic, or mixed etiology
  - Vascular, neurological, endocrinological, and iatrogenic factors may contribute to organic ED
  - Most cases of ED involve at least some psychogenic/relational aspect

- ED is often associated with interpersonal and relationship stress

Key Guidelines: Diagnosis

Men presenting with symptoms of ED should undergo a thorough medical, sexual and psychosocial history, a physical examination, and selective laboratory testing (*clinical principle)*

Men should be counseled that ED is a risk marker for underlying cardiovascular disease and other health conditions that may warrant evaluation and treatment (*clinical principle)*

In men with ED, morning serum total testosterone levels should be measured *(moderate recommendation, evidence level C)*

Key Guidelines: Treatment

For men being treated for ED, referral to a mental health professional should be considered to promote treatment adherence, reduce performance anxiety, and integrate treatments into a sexual relationship. *(moderate recommendation, evidence level C)*

Clinicians should counsel men with ED who have comorbidities known to negatively affect erectile function that lifestyle modifications, including changes in diet and increased physical activity, improve overall health and may improve erectile function. *(moderate recommendation, evidence level C)*

Men with ED should be informed of all approved treatment options including PDE5 inhibitors, Vacuum Erection Devices, Intracavernous Injections, Intraurethral Suppositories, and Penile Prostheses *(varying levels of recommendation and evidence)*

CASE PRESENTATIONS

LR – 33 y/o man

6 year history of difficulty maintaining penile erection

- Severe psychological distress
- SHIM score 5
- No current relationship due to anxiety about sexual performance
  - Last relationship ended in part due to sexuality issues
- Has tried multiple PDE5I without benefit
  - Requesting Platelet Rich Plasma

LR – 33 y/o man

Past Urologic History

- Right Side UDT as neonate. AUA Symptom Score 0/35

Past Medical History

- Negative

Medications

- Allergy Meds PRN

Past Surgical History

- Right side Orchiopexy

LR – 33 y/o man

Physical Examination

- 6’, 2” 180 pounds, BP 135/78 P 60
- Anxious Affect, NAD
- Neurologically Intact
- Uncircumcised phallus, no nodules, normal testes
- Prostate 10 mL, smooth, normal rectal tone

Laboratory Testing

- All WNL including testosterone (640 ng/mL)

Discussion

Very common to see high distress in young men with ED

- Negatively impacts relationships, can lead to avoidance of dating or pursuing sexual relationships

Often psychogenic in young men: Cycle of anxiety

- Psychological stressors are thought to contribute to ED by failure of the CNS to suppress sympathetic nervous system tone and stress response, both of which tend to oppose penile erection
- One sexual experience with difficulty of erections (alcohol, stress, fatigue, etc.) can lead to anxiety/stress when entering the next sexual experience.

Very helpful to combine medical treatments with psychological counseling

Management

Thorough evaluation of psychosexual history and recommendation for consultation with a mental health professional (Guideline Statements 1 and 6)

Penile Duplex Ultrasound recommended to assess vascular integrity of the penis (Guideline Statement 5)

Advised on management options (Guideline Statements 8, 13,14,16,18)

Instructed on proper dosing and dose titration for PDE5I (Guideline Statements 9 and 10)

Counseled that PRP should be considered experimental (Guideline Statement 25)

Outcome

Penile Duplex Ultrasound

- Mean PSV 40 cm/s bilaterally, EDV 0 cm/s bilaterally

Followed up with a sex therapist for 6 biweekly sessions

At 12 week follow up sexual anxiety decreased and patient had started to date

- PDE5I prescription maintained for assistance with sexual encounters
- Did not require nor request experimental therapies

GH – 54 y/o man

3 year history of difficulty maintaining penile erection

- Denies penile deformity
- Moderate psychological distress
- SHIM score 12
- Stable relationship with wife of 25 years who denies sexual issues
- Has tried sildenafil 50 mg twice without efficacy

GH – 54 y/o man

Past Urologic History

Denies. AUA Symptom Score 5/35

Past Medical History

Hypertension, Diabetes, GERD

Medications

Lisinopril, HCTZ, Metformin

Past Surgical History

Laparoscopic Right Side Inguinal Hernia Repair

Nissen Fundoplication

GH – 54 y/o man

Physical Examination

- 5’, 11” 240 pounds, BP 157/98, P 84
- Pleasant, NAD
- Neurologically Intact
- Circumcised phallus, no nodules, normal testes
- Prostate 20 mL, smooth, normal rectal tone

Laboratory Testing

- Hemoglobin A1c 7.7%, Total Chol 237, LDL 140, HDL 43, others WNL

Discussion

Lifestyle change is associated with a slight but significant improvement in erections

- Esposito JSM 2009: 209 men randomized to intense lifestyle change v standard of care
  - At follow up, 56% of men in lifestyle group had no ED compared to 34% at initiation
  - Greater accomplishment of health goals associated with better outcomes

Many men who receive PDE5I are not given instructions on proper dosing

- Atiemo J Urol 2003: 253 men referred from PCP for failure of PDE5I
  - 42% of men provided re-education experienced success with PDE5I
    - 94% persistent response at > 2 years
  - Advise on proper dosing, timing, need for stimulation, dietary considerations

Management

Patient counseled on lifestyle modification as a means to improve health and possibly optimize erectile function (Guideline Statements 3 and 7)

AM testosterone assessment (Guideline Statement 4)

Offered option of consultation with a mental health professional (Guideline Statement 6)

Instructed on proper dosing and dose titration for PDE5I (Guideline Statements 9 and 10)

Advised on management options (Guideline Statements 13,14,16,18)

Outcome

Testosterone 340 ng/mL

Enrolled in weight loss program

- Over 12 weeks experienced 20 pound weight loss, improvement in body image

Declined mental health evaluation

Patient repeated trial of PDE5I with dose titration and proper administration

- Improved erection response sufficient for intercourse

Summary

The 2018 AUA Guidelines are designed to help clinicians diagnose and treat Erectile Dysfunction according to the best level of evidence

Patients should be informed of all available treatment options and choose the option that is most aligned with their condition, goals, and risk tolerance

Mental Health evaluation and advice on general health and well-being should be considered standard components in holistic management of ED

Q and A

AUA Testosterone Guideline

A case-based approach

Landon Trost, MD
Brigham Young University, Provo, UT

Disclosures

- AUA Guideline Panel Member
  - 2018 guideline + update (~2024)
  - No speaking for panel / AUA / guideline
- SMSNA Secretary
- J Sex Med Associate Editor
- ABU sexual medicine question editor

Case #1 – Random Testing Guy

Background – Case #1

- Pt is receiving T injections (200 mg) every 2 weeks
- TT level on therapy is 120 ng/dl
- The next step is?

More Information

Dosing

- 4-5 half-lives
- <4 weeks for gels, patches
- Injections after 3-4 cycles
- Goal 450-600 ng/dl (middle tertile GS22)

Gels
- AM after applying

Injections (short acting)
- Half-way between injections

Injections (long-acting)
- Half-way between injections

2 weeks after placement to assure 450-600 (# of pellets); 1 pellet = 50 ng/dl of TT

12 weeks to figure out frequency of administration

Case #1 - Follow-up Testing

- Change dose to weekly (or twice weekly)
- Lower dose more frequent
- Check half-way between

Gels
- Not an issue

Injections (short acting)
- Weekly vs biweekly preferred (lower peaks)

Injections (long-acting)
- <450, decrease 1 wk; >600, increase 1 wk

Pellet – at 12 weeks
- If <400, replace pellets; >400, wait 1 month

*Table 7, Appendix B – T Guidelines

Case #2 – Young Guy

Background – Case #2

- 27 year-old man referred to you for TT 195 ng/dl
- Repeat AM TT 235 ng/dl
- The next step is:

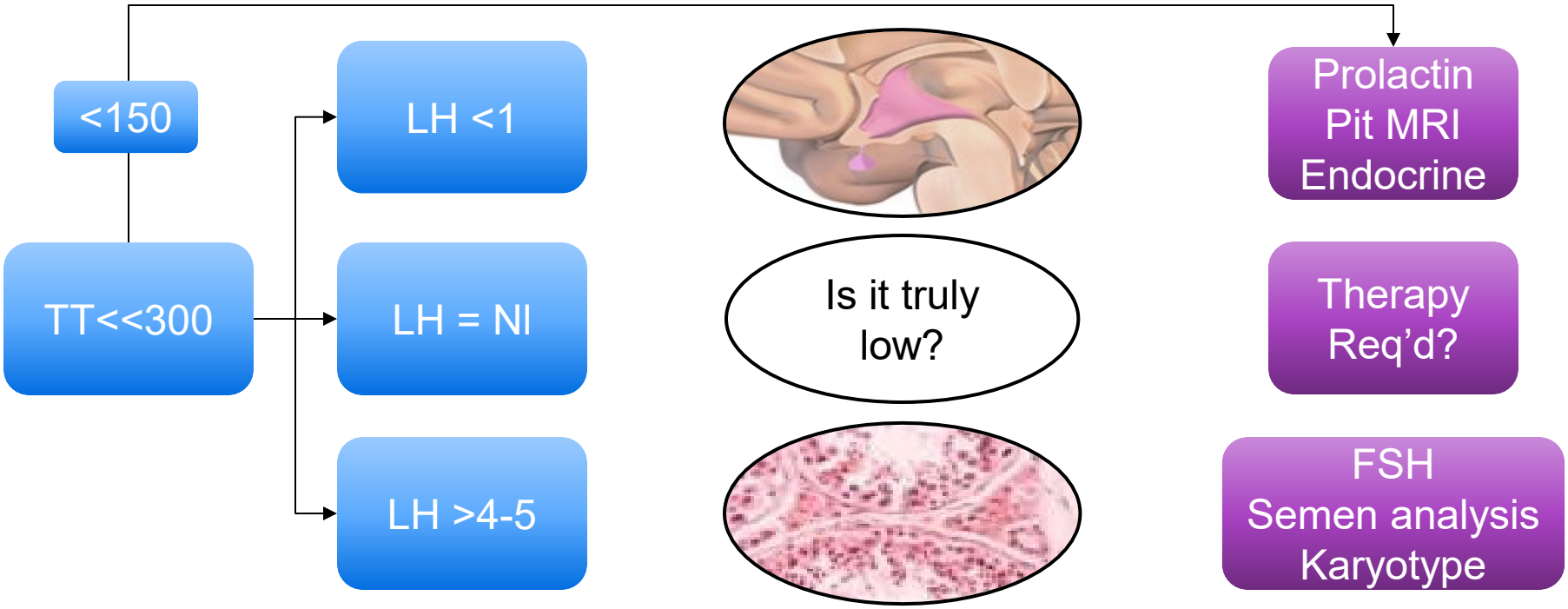
Diagnostics!

Case #2 - Why?

- Guidelines not intended to be ‘cook-book’ for every pt
- 27 yo w/ low TT very different compared to 63 yo
- Next step is?
  - LH – why?

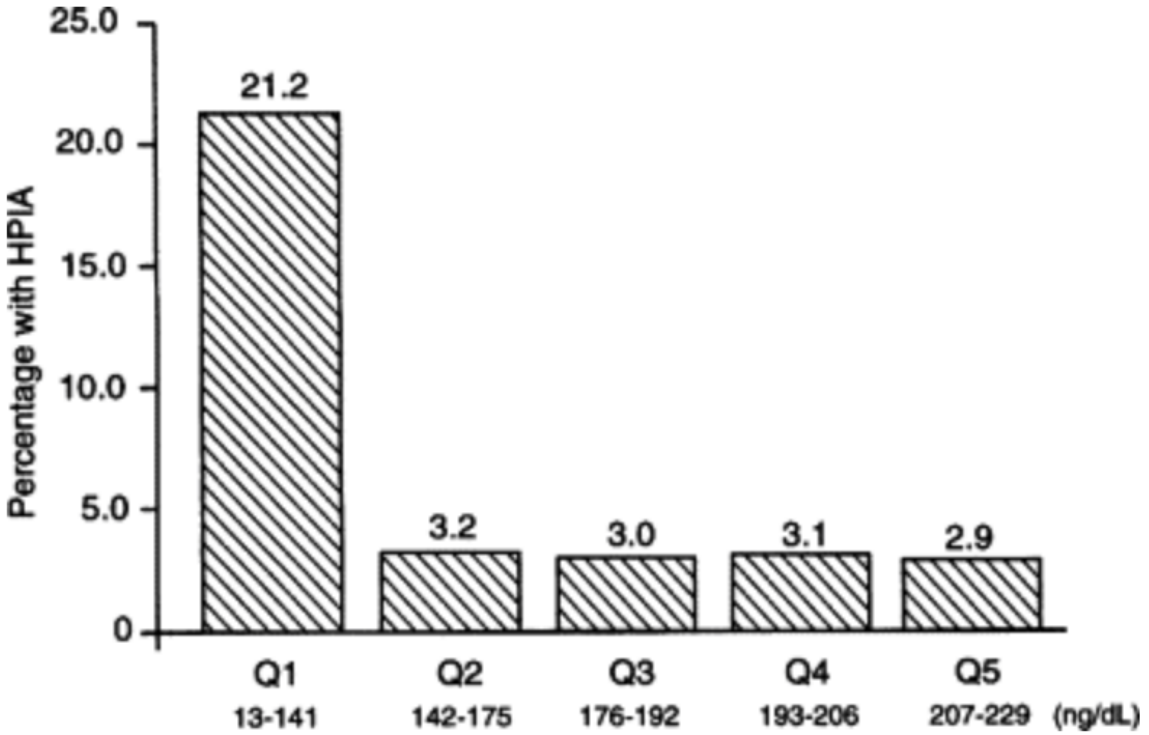
Appendix C – AUA Testosterone Guidelines 2018

Case #2 - Algorithm



Low TT – Pituitary Imaging

- Yield much higher at TT<150[1]
- TT levels (x-axis)
- % pituitary imaging abnormalities



1 – Citron JT, et al: 1996 J Urol.

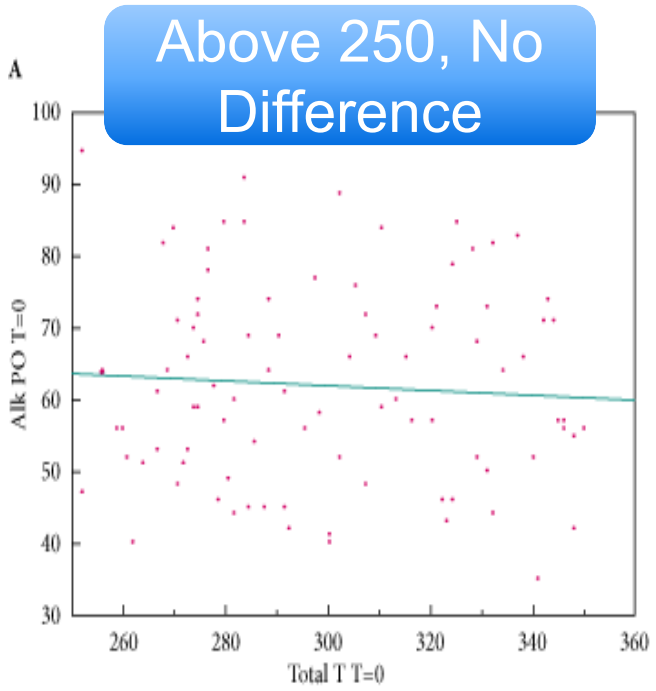
AUA Guideline Statement #6

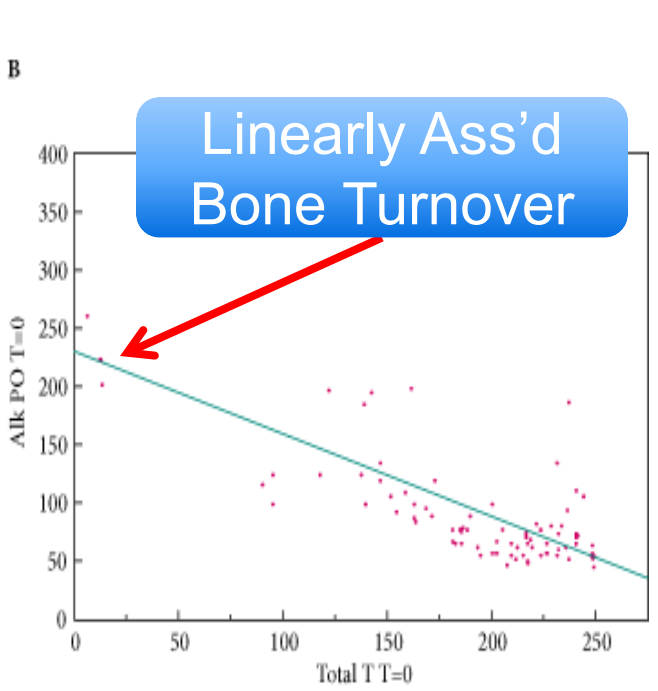
In patients with low testosterone, clinicians should measure serum LH levels

Strong Recommendation; Evidence Level Grade A

Case #2 - Any Other Testing You'd Consider?

- DEXA scan
- Younger
  - <50 yo[1] = 35% w/ osteopenia
- TT<250 ng/dl[2]





1 – Kacker R, et al: 2014 J Urol. 2 – Dabaja AA, et al: 2015 BJU Int.

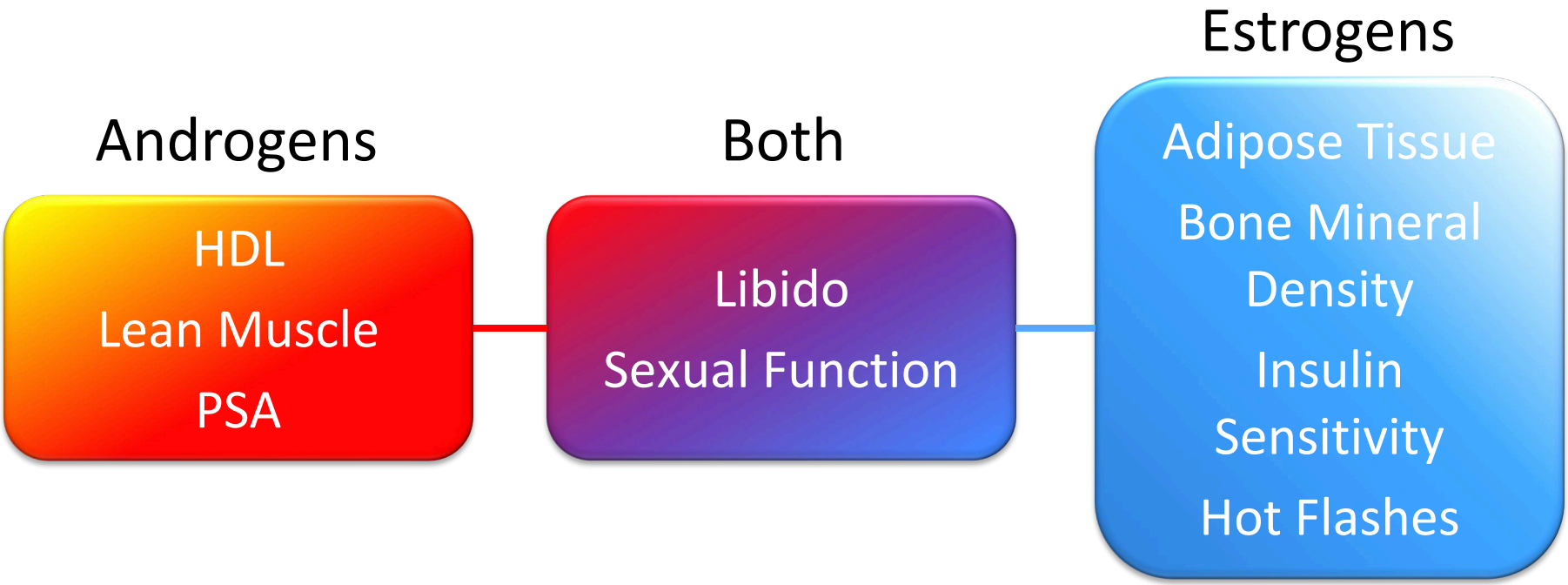
Case #3 – Obese Guy

Background – Case #3

- 52 yo M, BMI 41
- On TTh x 3 years with injectables
- Symptomatic impro
- Gynecomastia / mil (not overly bothersome)
- Next step is?

Estradiol

Pertinent Background – Case #3



Comments – Case #3

- Obese male may have low TT but high E2
  - ? TTh appropriate – we don't know – reasonable
- Baseline gynecomastia – check E2
  - If >40 pg/ml = Endocrine referral
- New onset gynecomastia – observe initially
- Persistent gynecomastia – TTh reduction, alternative agents, aromatase inhibitors?

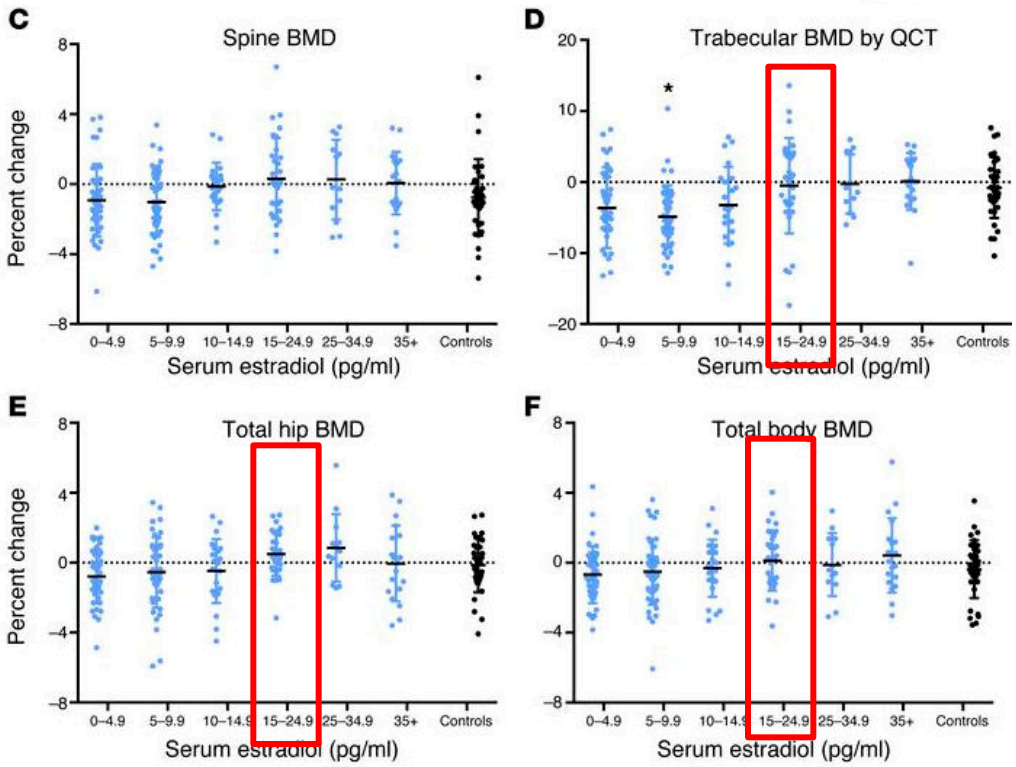
Appendix C – Testosterone Guidelines - 2018

Anastrozole

Author (Year)	Design	N=	Age	Dose	Dur (mo)	Δ T	Δ E2
Burnett-Bowie (2008)	RCT, DB, PC	88	66	1mg /day	12	202	-3.7
Dougherty (2005)	RCT, DB, PC	37	67-68	1mg/day, 1mg biw	3	NA	NA
Leder (2004, 2005)	RCT, DB, PC	37	68	1mg /day, 1mg biw	3	Daily: 229 BIW: 123	Daily:-9 BIW:-10
Holbrook (2003)	Pro	10	42	1mg /day	0.5	380	-20

- Relatively few RCTs, short duration, small series.

Impact of Anastrozole on BMD



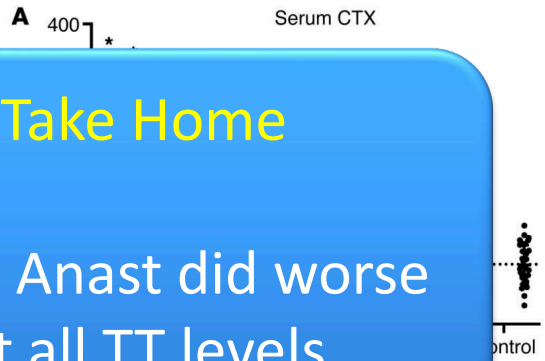
- 15 pg/ml appears to be threshold (in this study)
- Note that study was only 4 months
- Lower = worse

1 – Finkelstein JS, et al: 2016 J Clin Invest.

Impact of Anastrozole on BMD

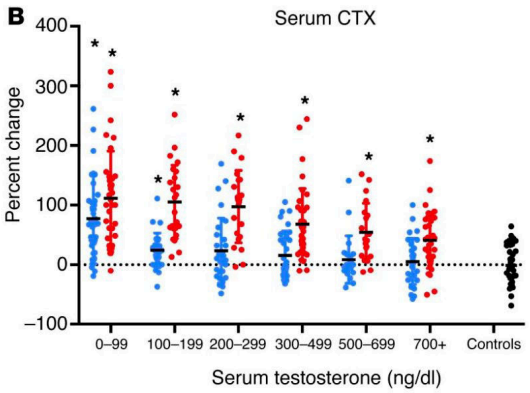
- Measures of bone turnover
- Higher = worse

- Blue = TTh alone
- Red = TTh + anastrozole



Take Home

TTh + Anast did worse at all TT levels



1 – Finkelstein JS, et al: 2016 J Clin Invest.

Case #4 – Prostate Cancer

Three Prostate Cancer Scenarios

Case 4a	Case 4b	Case 4c
• 45 yo Caucasian M • T • M symptoms		

Baseline PSA?

Background – Case #4a

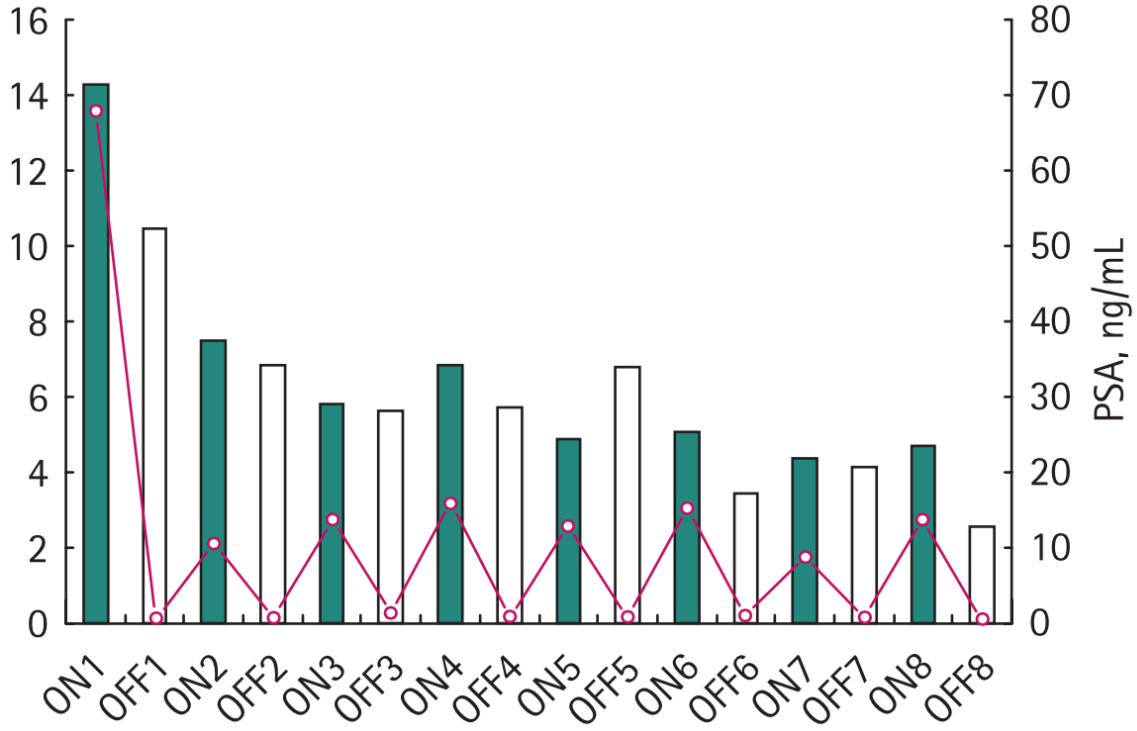
- AUA guideline - early detection of Prostate Cancer[1]
  - Recommends against screening age 40-54 for those at average risk
  - High risk features – race, family history
  - No comment on low testosterone

1 – AUA Guideline – Carter HB, et al: Early Detection of Prostate Cancer, 2013 (confirmed 2015).

Case #4a

Is Low T a Risk Factor for Having Prostate Cancer?

Prostate Is an Androgen-sensitive Organ



- Reductions in T = lower PSA
- Restoration of T = restoration of PSA

*Figure – Taille, ADL, et al: 2002 BJU Int.

PSA Response to Testosterone

…So, it's not surprising that PSA would rise w/ TTh

Meta-analysis of 28 RCTs[1]

- TTh increases PSA +0.2 (CI 0.13-0.27)
- Lower T, more likely to experience increase

…Importantly, no increased risk of elevated PSA

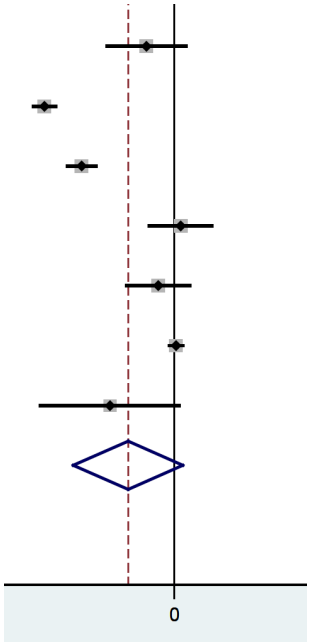
Meta-analysis of 6 RCTs[1]

- No increased risk for elevated PSA
- OR 0.85 (CI 0.42-1.75)

1 - AUA Guideline Evidence Synthesis Document

Association of Low T and Prostate Ca

- Meta-analysis of 7 trials[1]: Mean TT -29 ng/dl among men with prostate ca (CI -63 to 5)



<u>No association (or a very minor one)</u>

…however

1 – AUA Guideline Panel Summary Report 2017.

Low T and Prostate Ca

- Low T is an *independent* risk factor for high grade disease in men w/ prostate ca[1-2]
- Lower T = higher risk[2]

OR of GI ≥ 4+3	
Age	1.07
PSA	1.05
Prostate Volume	0.96
Low T	2.14

1 – Park J, et al: 2015 BJU Int.; 2 – Albuquerque GAML, et al: 2017 Rev Assoc Med Bras.

AUA Guideline Statement #12

PSA should be measured in men over 40 years of age prior to commencement of testosterone therapy to exclude a prostate cancer diagnosis

Clinical Principle

Three Prostate Cancer Scenarios

Case 4a

- 45 yo Caucasian M
- T
- N
  symptoms

Baseline PSA Screening

Case 4b

- 55 yo AAM
- PS
- Fa
  pr
- TT
- M
  symptoms

Risk of Developing Prostate Cancer

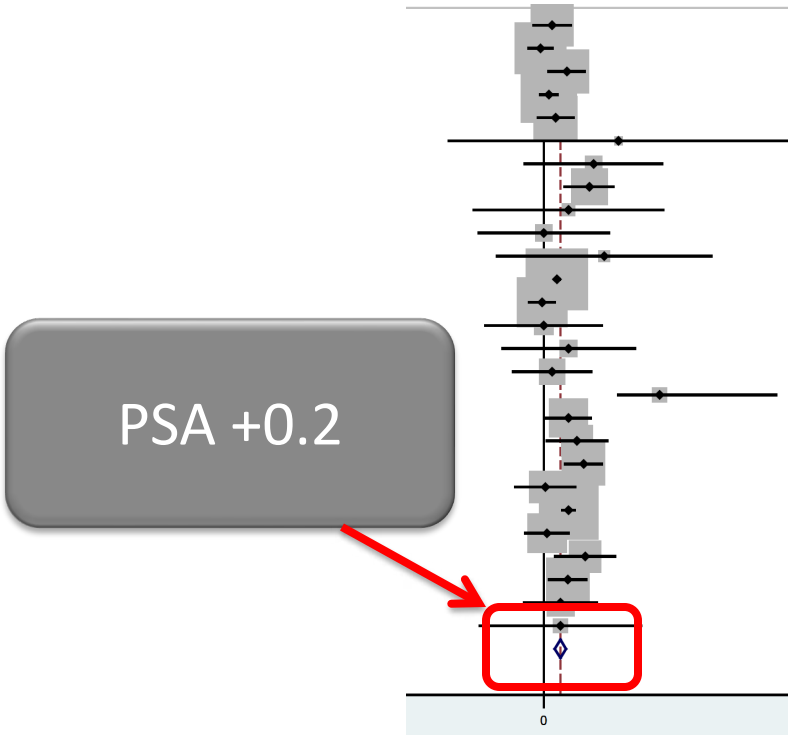
Case 4c

Case #4b

Testosterone Therapy and Risk of Developing Prostate Cancer

Testosterone Increases PSA Slightly

- Meta-analysis of 28 RCTs*
- TT<350
- All subgroups non-sig
  - Optimal T level
  - Route
  - Tx Duration (<, >6 mo)
- Meta-analysis of 6 RCTs*
  - **<u>No increased risk of PSA>4</u>**



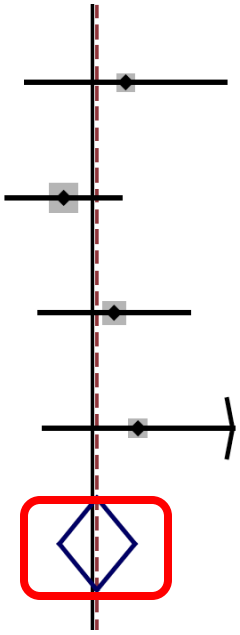
*Data from AUA Guideline Evidence Report

T Therapy & De-novo Prostate Cancer

- Meta-analysis 4 RCTs – no increased risk of prostate ca*

	T – per 1000 pt yrs	Plcbo –per 1000 pt yrs	OR (CI)
Prostate bx	38.7	2.8	1.87
Prostate ca	9.2	8.3	1.09
PSA > 4	57.1	41.6	1.19
IPSS	5.5	2.8	1.08
All prostate events	112.4	55.7	1.78

Consistent with other meta-analyses[1-2]



*Data from AUA Guideline Evidence Synthesis Document;

1 – Fernandez-Balsells MM, et al: 2010. JCEM;

2 – Calof OM, et al: 2005 J Gerontol.

AUA Guideline Statement #17

Clinicians should inform patients of the absence of evidence linking testosterone therapy to the development of prostate cancer

Moderate Recommendation: Grade B

Three Clinical Scenarios

Case 4a

- 45 yo Caucasian M
- T
- M
  symptoms

Baseline PSA Screening

Case 4b

- 55 yo AAM
- PS
- Fa
  pr
- TT
- Mu
  symptoms

No Increased Risk of Developing Prostate Cancer

Case 4c

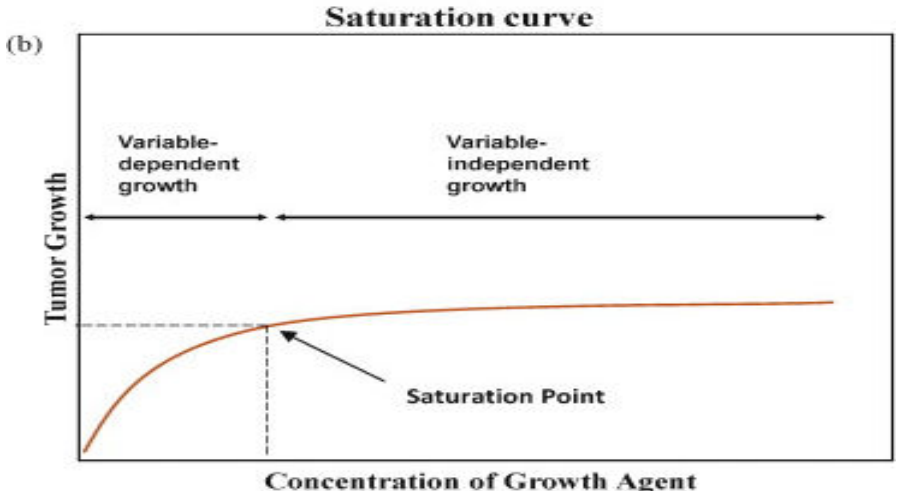
- 55 yo AAM
- Gl 6 – on active surveillance
- U 4+3, T
- P
- TT = 180
- Multiple low T symptoms

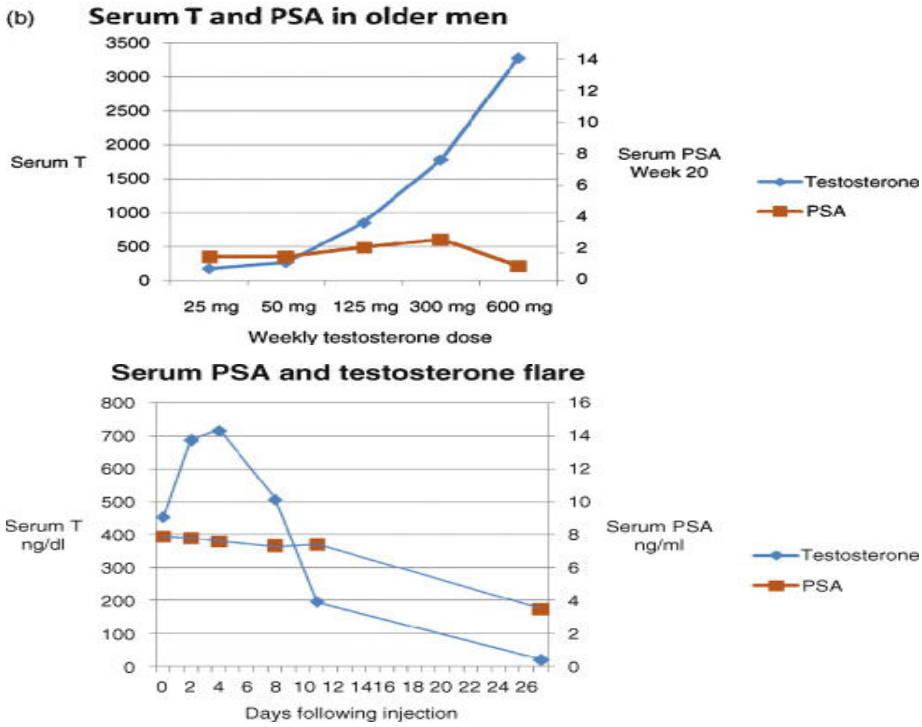
Treated or In-situ Prostate Cancer

Case #4c

Testosterone Therapy in Men with In-situ or Treated Prostate Cancer

Data Arguing for Safety of TTh





- 41 low T men treated TTh
- Similar intraprostatic T

*Fowler JE, et al: 1981 J Urol; Marks L, et al: 2006 JAMA;Morgentaler A, et al: 2009. Eur Urol.

Data Arguing for Safety of TTh

Untreated Prostate Ca

- Retrospective[1], n=13, Tx 2.5 yrs
  54% w/ no ca in bx; 17% upgraded
- Retrospective[2], n=28, f/u 39 mo
  32% w/ progression (similar to controls)

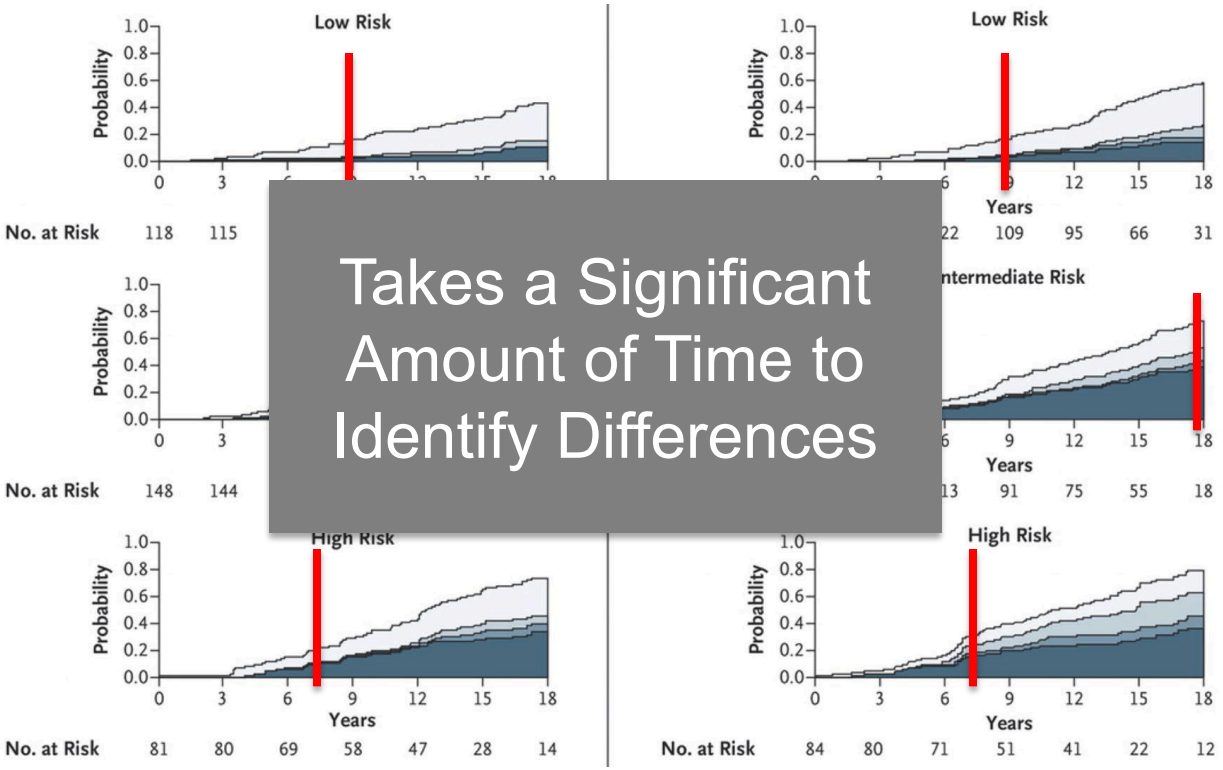
Treated Prostate Ca

- Retrospective, s/p RP, n=7[3]
- Retrospective, s/p RP, n=10[4]
- Retrospective, s/p RP, n=31[5]
- Retrospective, s/p RP, n=103[6]
- Retrospective, s/p EBRT, n=5[7]
- Retrospective, s/p Brachy, n=20[8]
- Retrospective, s/p EBRT, n=13[9]

1 – Morgentaler A, et al: 2011. J Urol; 2 – Kacker R, et al: 2016 Asian J Androl; 3 – Kaufman JM, et al: 2004 J Urol; 4 – Agarwal PK, et al: 2005 J Urol; 5 – Sarosdy MF: 2007 Cancer; 6 – Pastuszak AW, et al: 2013. J Urol. 7 - ; Morales A, et al: 2009 BJU Int. 8 – Balbontin FG, et al: 2014 BJU Int; 9 – Pastuszak AW, et al: 2013 IJIR.

Data Arguing Against Safety of TTh

RP



Takes a Significant Amount of Time to Identify Differences

Watchful Waiting

1 – Bill-Axelson A, et al: 2014 NEJM.

Data Arguing Against Safety of TTh

Power analysis

- 20% increase in prostate cancer rates with 80% power
- RCT of 85,862 men x 1 year[1]
- For reference, largest RCT to date = 790 men x 1 year[2]
- 20% is a fairly sizable difference; bigger numbers to detect smaller differences

1 – Calof OM, et al: J Gerontol Ser A 2005; 2 - TTrials

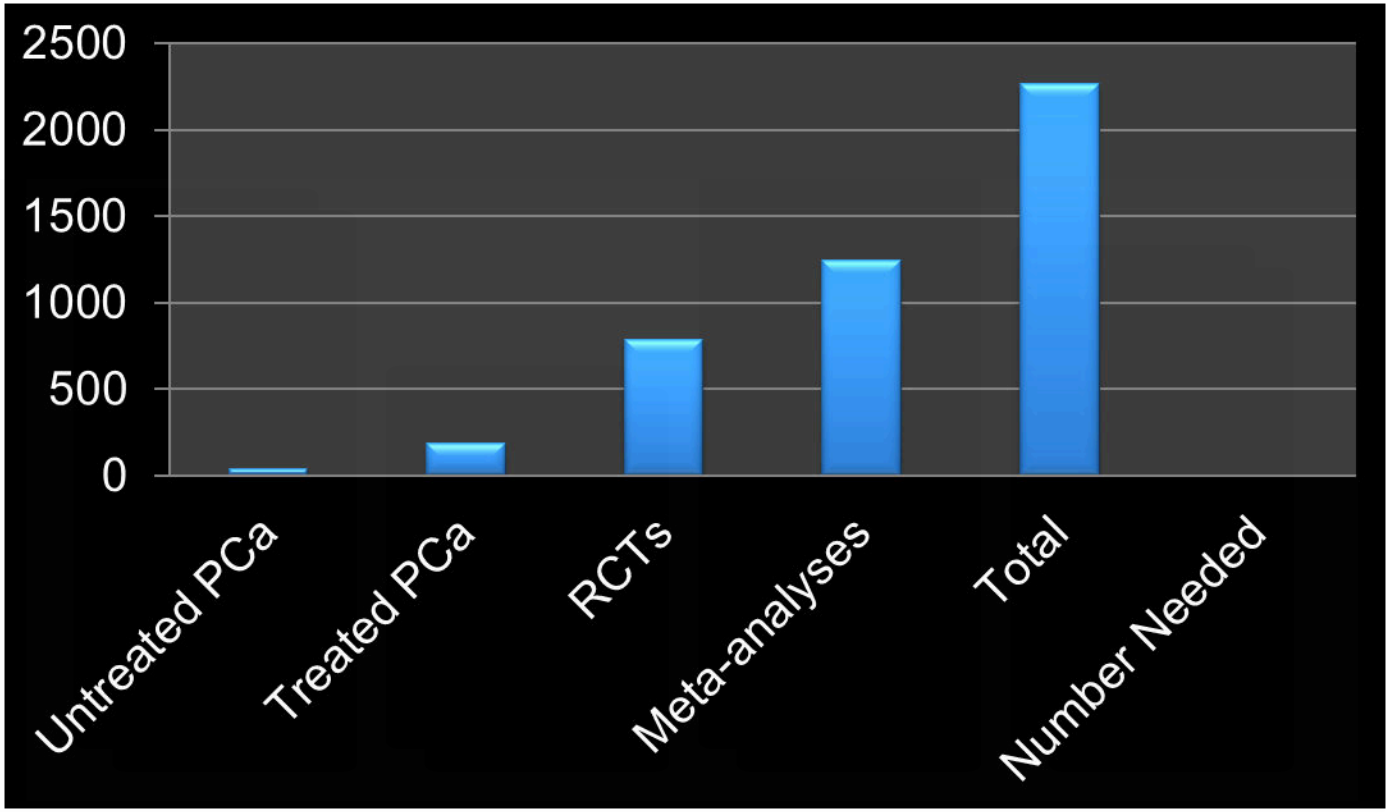
Data Arguing Against Safety of TTh

Untreated Pca: 41

Treated Pca: 189

New RCTs: 790

Meta-analyses: 1,246



Data Arguing Against Safety of TTh

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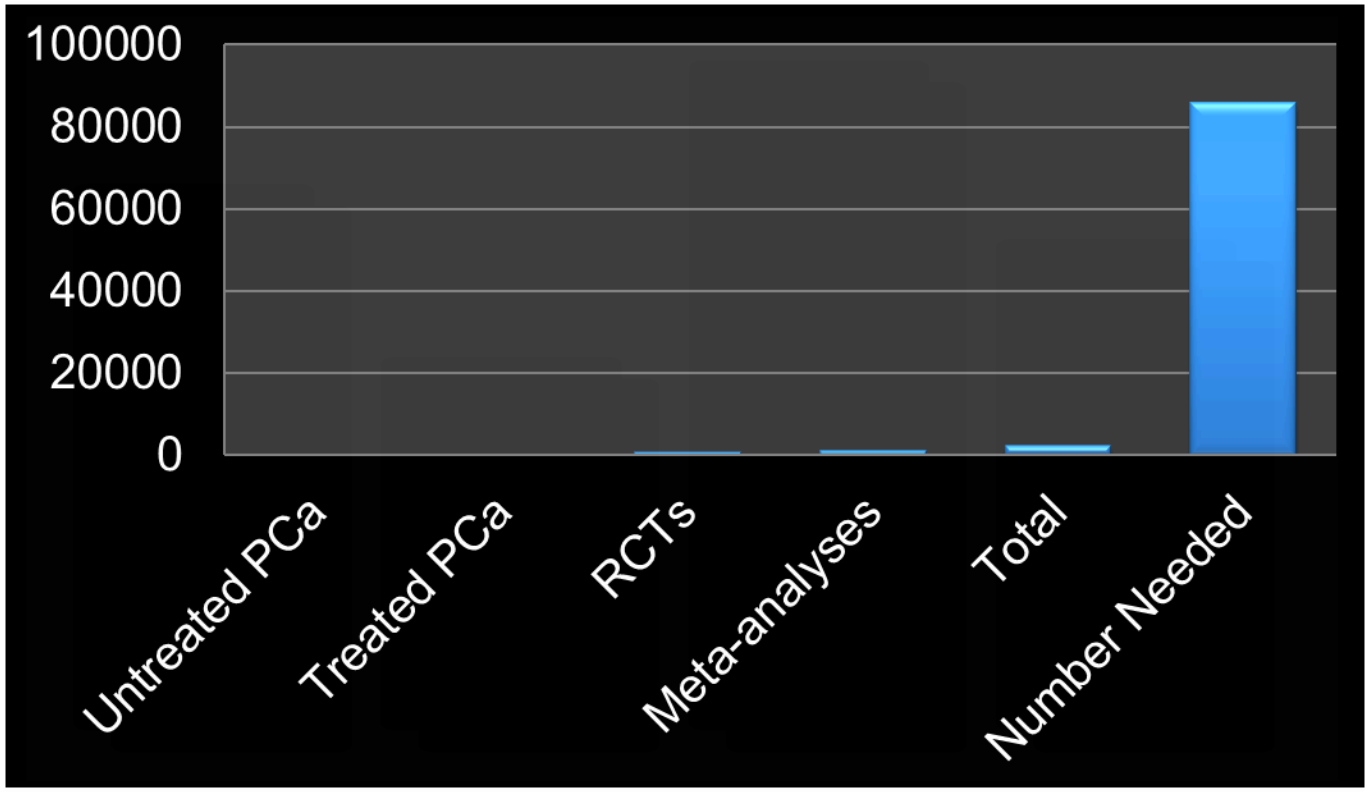

AUA Guideline Statement #18

Patients with testosterone deficiency and a history of prostate cancer should be informed that there is inadequate evidence to quantify the risk-benefit ratio of testosterone therapy

Expert Opinion

Summary of Cases

- Case #1 – when to check T levels / how to dose
- Case #2 – adjunctive testing (particularly in younger men)
- Case #3 – obese men, estradiol, and considerations for therapy

Summary of Cases

- Case #4a – when to obtain PSA – age 40 (higher risk)
- Case #4b – risk of developing prostate ca (no increased risk)
- Case #4c – TTh in men with h/o prostate ca (we don't know)

Thank You

Case Based AUA/SMSNA Guideline Learning: Disorders of Ejaculation

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UCSF

CHAIR, AUA GUIDELINE ON DISORDERS OF EJACULATION

CHAIR, AUA CORE CURRICULUM COMMITTEE

Learning Objectives

- At the conclusion of this course, attendees will be able to….
  - Conduct an evidence-based evaluation of the man presenting with concerns regarding timing of ejaculation/orgasm
  - prescribe evidence-based medical management for ejaculation disorders, where appropriate
  - Determine if/when referral for specialized mental health assessment is required for the man presenting with disorders of ejaculation/orgasm

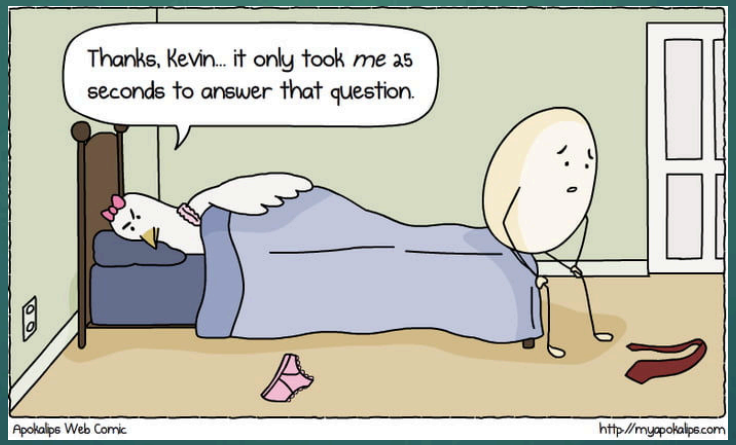
Disclosure Regarding Off-Label Drugs

At this time NO medical therapy has been approved by the US FDA for management of any disorder of ejaculation

All medical therapies discussed in this portion of the presentation should be considered off-label and patients should be advised as such

Disorders of Ejaculation

- May cause substantial bother
- Pathophysiology is poorly understood
- Evidence-based management options exist



https://9gag.com/gag/306366/which-came-first-the-chicken-or-the-egg, accessed 6/2/20

Case Presentation #1: S

- S is a 23 year-old Caucasian man
  - Distressed that he “comes too fast”
  - Has been reading “intactivist” literature and is concerned that neonatal circumcision has contributed to his PE
  - Past urologic history
    - Denies; 2/35 AUA symptom score
  - Past medical history
    - none
  - Medications
    - none
  - Past surgical history
    - Neonatal circumcision

Salient Guideline Statement

- Clinicians should assess medical, relationship, and sexual history and perform a focused physical exam to evaluate a patient with premature ejaculation

Detailed Sexual History

- Sexual debut at 16
  - Ejaculation latency has varied between 1-10 minutes
    - Variability based on partner novelty, ejaculation frequency, use of barrier protection
  - In consensually non-monogamous relationships with 2 female partners
    - Ejaculation latency of 3 min with secondary partner, 6 min with primary partner
    - Patient reports that both partners are disappointed
  - Moderate sense of control
  - Denies issues with sexual desire and/or erections
- Physical examination
  - Anxious Affect, normally virilized
  - 5’ 11” 180 lbs
  - Neurologically intact
  - Circ phallus, normal genital exam and DRE

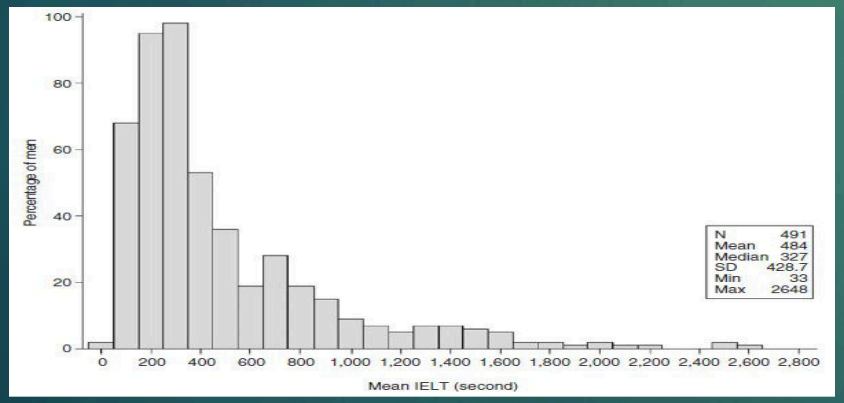
Salient Guideline Statements

- *Lifelong* premature ejaculation is defined **as consistently poor ejaculatory control**, **associated bother**, and **ejaculation within about 2 minutes** of initiation of penetrative sex that has been present since sexual debut. (EO)

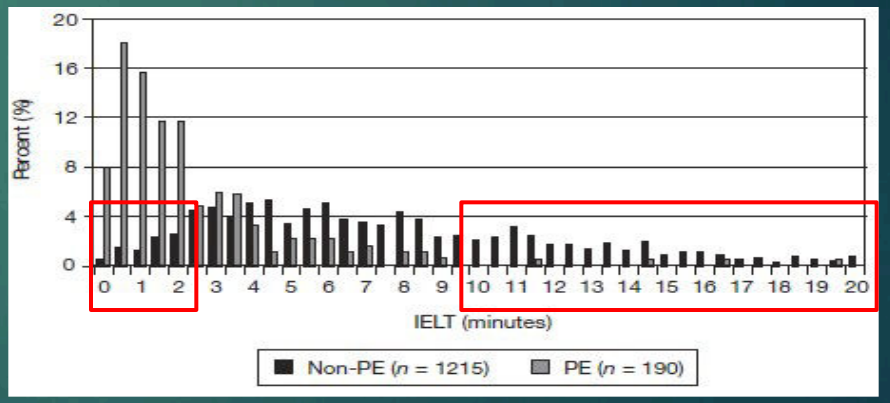
- Clinicians should advise patients that ejaculatory latency is not affected by circumcision status. (MR, LOE C)

Ejaculation latency times (ELT) are variable

- 2.5% of men have ELTs of about 1 min or less (left table)
- Bother is not perfectly correlated to ELT: (right table)
  - Some men with short ELT have no bother from short latency
  - Some men with very long ELT have bother from “short” latency



Waldinger 2005 n=492, general population



Patrick 2005 n=1536, DSM IV-TR PE

Treatment

- **Educate patient on the natural variability of ejaculation response and normative data**
  - **Consider Waldinger's provisional diagnoses**
    - **Natural Variable PE**: Intermittent short ejaculation latency on some (but not all) sexual encounters
    - **Subjective PE (PE-Like Disorder):** Concerns about insufficient duration of sex and latency time in men with ejaculation latency times with the range of population means
- **Recommend that he discuss with partners mutual preferences regarding sexual interactions**
- **Advise that there are no robust data suggesting consistent effect of circumcision status on ejaculation latency**

Outcome

- Patient was reassured by epidemiological data
- On inquiry, no partners reported bother from ejaculation latency time
  - Opportunity for discussion about what aspects of sexual encounters are genuinely important for satisfaction of all parties
- No further follow up was required

Case Presentation #2: B

- B is a 38 year-old African-American man
  - Concerned about “problems with ejaculation control”
  - Past urologic history
    - Denies; 8/35 AUA symptom score
  - Past medical history
    - Seasonal Allergies, Hyperlipidemia
  - Medications
    - atorvastatin, cetirizine, pseudoephedrine PRN
  - Past surgical history
    - Lasik, Wisdom Teeth
  - Physical examination
    - Normal

Detailed Sexual History

- Ejaculation within 30 seconds of penetration >90% of coital encounters since sexual debut at age 18
- Marked bother, absence of control
- Blames PE for failure of several relationships
- Denies cormorbid erectile or desire disorders
- Married to a woman 10 years, partner endorses bother

Salient Guideline Statements

- Clinicians should not use additional testing for the evaluation of a patient with lifelong premature ejaculation. (CR, LoE C)
- Clinicians should consider referring men diagnosed with premature ejaculation to a mental health professional with expertise in sexual health. (MR, LoE C)
- Clinicians should recommend daily SSRIs; on demand clomipramine or dapoxetine (where available); and topical penile anesthetics as first-line agents of choice in treatment of premature ejaculation. (SR, LOE B)

Treatment

- Medical Therapy with Paroxetine 20 mg daily
- Referral to AASET certified sex therapist who recommended
  - Start-stop exercises
  - Couple's therapy focused on communication and PE influence on relationship

Salient Guideline Statements

- Clinicians should advise men with premature ejaculation that combining behavioral and pharmacological approaches may be more effective than either modality alone. (MR, LoE B)

Outcome

- Initial GI upset with paroxetine was self-limited
- B learned to recognize signs of incipient ejaculation during masturbation and developed means to communicate this to his spouse while receiving stimulation
- Improved communication helped to reduce negative interpersonal feelings

Follow up

- Ejaculation latency increased to 2 minutes
  - Couple started coitus with minimal thrusting initially
  - Overtime, increased capacity to engage in thrusting with attention to slowing down when arousal reached “75%”
  - At one year relationship quality had improved and average ejaculation latency time was 3.5 minutes

Case Presentation #3: L

- L is a 62 year old Caucasian man
  - “Difficult to reach climax” since Radical Prostatectomy 3 years ago
  - Past urologic history
    - pGS 3+4=7 T2bNx prostate cancer, current PSA < 0.01
    - Scant residual SUI managed without pads
  - Past medical history
    - Diabetes, Hypothyrodism, Depression
  - Medications
    - Metformin, Thyroxine, Sertraline
  - Past surgical history
    - RALP 3 years ago
  - Physical Exam
    - Normal post-RALP exam

Detailed Sexual History

- Domestic partnership with a man for 25 years
  - Lifelong gay identity
    - “Versatile/switch” till age 30, now identifies as “top” but performs insertive and receptive oral sex with his partner
  - Libido decreased from prior to RALP but present
  - Moderate ED, able to achieve erections with intracorporal injection therapy
    - Cannot climax with oral or anal insertive sex
    - Can sometimes climax (no ejaculation) with vigorous masturbation
    - Current partner is supportive but reaches exhaustion with both oral and anal sex

Salient Guideline Statements

- Clinicians should treat men who have delayed ejaculation and comorbid erectile dysfunction according to the AUA Guidelines on Erectile Dysfunction (EO)
- Clinicians should advise men with delayed ejaculation that modifying sexual positions or practices to increase arousal may be of benefit. (EO)
- Clinicians should suggest replacement, dose adjustment, or staged cessation or of medications that may contribute to delayed ejaculation (CP)

Updates since the Guidelines

- Rowland 2023 (SM): 351 men (mean age 37) with moderate/severe difficulty reaching climax
  - From a list of 14 previously reported etiologies, participants reported all that were perceived relevant and the single predominant suspected etiology
    - Mean of 2.95 reasons
    - Generalized Anxiety (48%) and Sexual Anxiety (41%) were most common
  - Authors grouped perceived etiology into 6 broad categories
    - Anxiety (66%)
    - Inadequate Stimulation (52%)
    - Low arousal (35%)
    - Partner Issues (19%)
    - Medication Conditions (17%)
    - Pain (6%)
  - **Implications: Inquiry on these 6 general categories may help elucidate etiology**

Per Guidelines…

- Continue ICI
- Consider cessation/change from sertraline
- Consider incorporation of sexual enhancement devices/alteration of sexual practices

Salient Guideline Statements

- Clinicians may utilize additional testing as clinically indicated for the evaluation of delayed ejaculation. (CR, LoE C)
- Clinicians may offer treatment to normalize serum testosterone levels in patients with delayed ejaculation and testosterone deficiency. (EO)

Laboratory Assessment

- CMP, CBC, WNL
- TSH: 1.1 mIU/L
- Free T4: 1.5 ng/dL
- Total Testosterone: 270 ng/dL
- Free Testosterone: 46 pg/mL
- Biothesiometry: Low tactile sensitivity over glans penis

Testosterone for DE?

- Paduch 2015: 76 men with T < 300 x 2 and ejaculatory symptoms randomized to T gel vs placebo for 16 weeks
- Delayed ejaculation was present in 44/76 and anejaculation in 25/76
- 66 completed the study
  - At follow up no significant difference in ejaculation or orgasm
  - Post Hoc analysis of patients who reached THERAPEUTIC testosterone levels did demonstrate benefit

Follow up

- Patient had concerns about T and prostate cancer
- Couple agreed to experiment with alternative means of sexual satisfaction
- Plan for follow up and discussion of off-label therapies such as cabergoline at a future visit

Conclusions

- Evidence based options exist for management of ejaculation concerns even in the absence of formal FDA approval
- Proper diagnostic criteria should be applied and patient's educated about what constitutes normal ejaculatory function
- Expectation setting and communication with partner(s) is essential

Q and A

Priapism: AUA/SMSNA Guideline

Trinity J. Bivalacqua MD PhD

Disclosures

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None Related to the Guideline Topic

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Bivalacqua TJ et al. J. Urol. 2022 208:43-52

Case Presentation

- A 41 year old man presents with prolonged priapism for 48 hours following trauma with no pain.
- How do you proceed?

Diagnosis of NIP

- In patients presenting with priapism, clinicians should complete a medical, sexual, and surgical history and perform a physical examination, including the genitalia and perineum. *(Clinical Principle)*

- In the majority of cases of priapism, the differentiation of acute ischemic versus non-ischemic may be made using only the **history and physical exam**.

Definition

- Non-ischemic (arterial, high flow): a persistent erection that may last hours to weeks and is frequently recurrent.
- Erections are nearly always non-painful, and cavernosal blood gas measurements are consistent with arterial blood.
- In contrast to acute ischemic priapism, the non-ischemic variant is not considered a medical emergency.

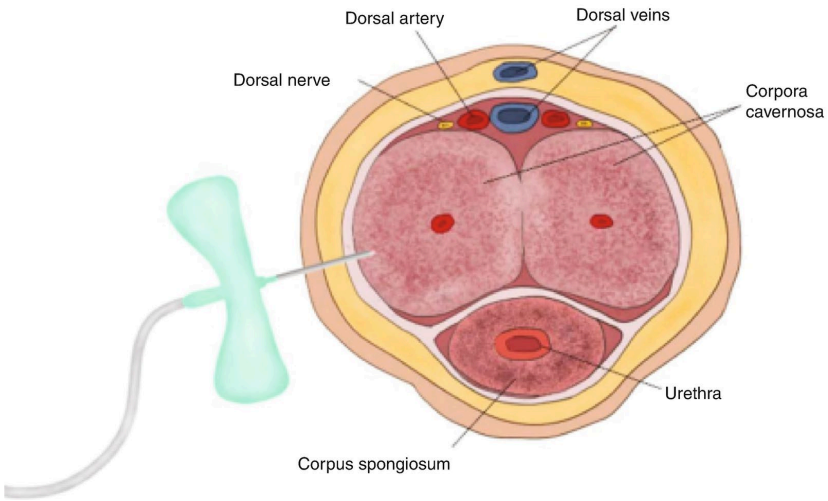
Diagnosis of NIP

Table 4: Key Findings in the Evaluation of Priapism		
Finding	Ischemic Priapism	Nonischemic Priapism
Corpora cavernosa fully rigid	U	O
Penile pain	U	O
Abnormal cavernous blood gases	U	O
Blood abnormalities and hematologic malignancy	S	O
Recent intracavernous vasoactive drug injections	S	O
Chronic, well-tolerated tumescence without full rigidity	O	U
Perineal trauma	O	S

O: Seldom present; S: Sometimes present; U: Usually present

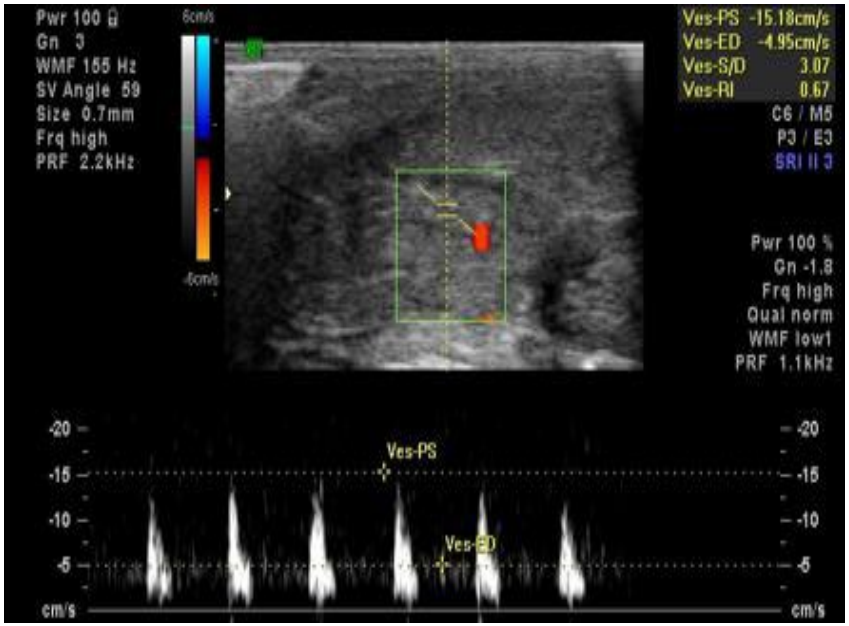
Diagnosis: Corporal Blood Gas

2. Clinicians should obtain a corporal blood gas at the initial presentation of priapism. *(Clinical Principle)*



Diagnosis: Imaging

3. Clinicians may utilize penile duplex Doppler ultrasound, when the diagnosis of acute ischemic versus non-ischemic priapism is indeterminate. *(Expert Opinion)*



Case Presentation

- **PE:** Penis with tumescence but no rigidity and no pain
- **ABG:** P02 92 mmHg, PC02 33 mmHg, pH 7.40
- **Imaging:** not done
- What's the next step?

Management of NIP

- **New Statement**: Patients should be counseled that non-ischemic priapism is NOT an emergency condition and they should be offered an initial period of observation. *(Expert Opinion)*

Management of NIP

- NIP is not a medical emergency. In contrast to ischemic priapism, NIP results in an erection with fully oxygenated corporal blood, and thus, no immediate erectile tissue damage occurs.
- All patients should undergo a period of at-home observation (4 wks) to define if the fistula will close spontaneously resulting in penile detumescence.
- In cases where the fistula is unchanged (Doppler ultrasound) and/or where patient bother is significant, intervention may be considered.

Case Presentation

- The patient fails a trial of observation and is in significant discomfort and is bothered by his condition.
- What's the next step?

Management of NIP

- **New Statement:** In patients with non-ischemic priapism who have failed a trial of observation and who wish to be treated, embolization should be offered as first-line therapy. *(Conditional Recommendation, Evidence Level: Grade C)*

Management of NIP

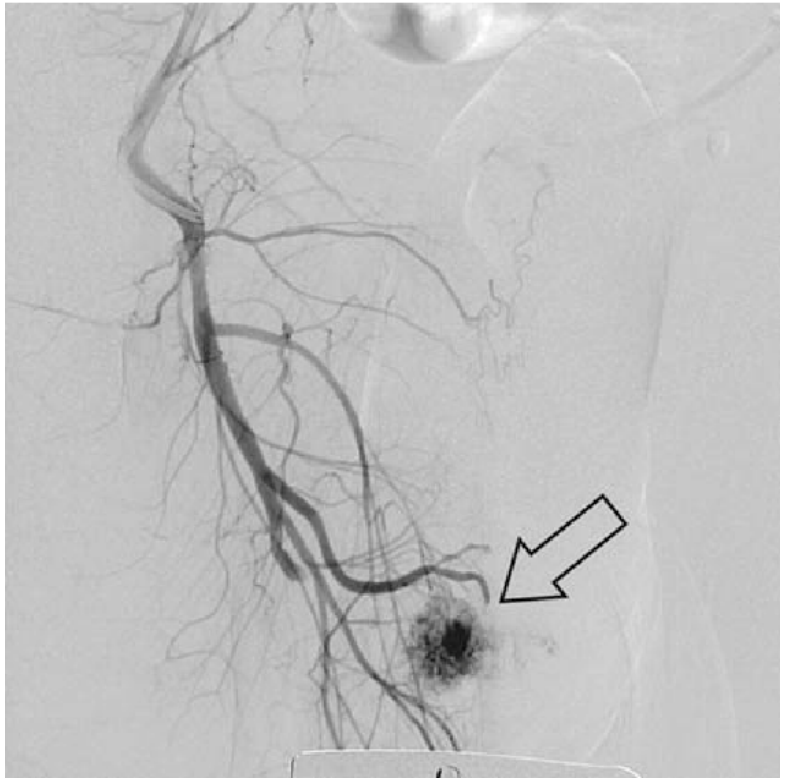
- Prior to consideration for embolization, the fistula should be readily visible on a PDDU. The ultrasound should be performed in the erect state and both penile shaft and perineum should be scanned. Angiogram is utilized to perform embolization.
- 38 studies (255 patients):
  - Embolization had a documented 85% success rate as defined by penile detumescence.
  - More than 80% of men after embolization retained functional erections.

Case Presentation

- The patient opts for embolization.
- Which material should be used for this intervention?

Management of NIP

- Resorbable (gel foam, autologous clot) and non-resorbable (microcoils, PVA particles) materials can be used.



Management of NIP

- Similar rates of detumescence, preservation of functional erections and recurrence were found between studies assessing resorbable and non-resorbable agents. PVA particles use was associated with the best erectile function recovery and autologous clot highest recurrence rate.
- Technical success occurred in 96-100% of cases, detumescence in 70-87% (overall 80%), ED in 7-19%, recurrence rates in 13-29% (overall 20%) of patients.

Case Presentation

- The patient fails initial embolization and is still bothered by his condition.
- What's the next step?

Management of NIP

- **New Statement**: The clinician should perform repeat embolization in patients with diagnosed non-ischemic priapism who are refractory to embolization. *(Moderate Recommendation, Evidence Level: Grade C)*

- Data suggests that this is more likely to be effective and safer than an attempt at surgical ligation, given the lack of experience in the latter approach for most urologists and the poor data supporting ligation.

Case Presentation

- The patient's priapism is resolved. The patient is delighted with the outcome.
- How should he be counseled?

NIP Counseling

- **New Statement:** Patient should be informed that embolization carries a risk of erectile dysfunction, recurrence, and failure to correct non-ischemic priapism.

Conclusions

- Non-ischemic priapism is not a medical emergency and a trial of observation should be considered.
- Penile Doppler ultrasound identification of fistula with embolization is most effective irrespective of coil type.
- Consider re-embolization for patients that recur prior to any surgical approach.
- Embolization can cause side effects including erectile dysfunction.

Case presentation

- 49 y/o black man with history of sickle cell disease and previous episodes of recurrent ischemic priapism which led to acute priapic events necessitating corporal aspiration and ICI PE treatment.
- Now presents with an acute priapic event that has lasted approximately 36 hours and reports that he delayed presenting to ED because of previous history and thought it would resolve with conservative measures.
- Does report erectile dysfunction and uses PDE5 inhibitors with little success. Has used trimix in the past but not sexually active now.

Sickle Cell Disease and other Hematologic Disorders

Guideline statement: In *patients with hematologic and oncologic disorders such as sickle cell disease or chronic myelogenous leukemia, clinicians should not delay the standard management of acute ischemic priapism for disease specific systemic interventions. (Expert Opinion)*

Pre-Surgical Management

9. Clinicians should manage acute ischemic priapism with intracavernosal phenylephrine and corporal aspiration, with or without irrigation, as first-line therapy and prior to operative interventions. (*Moderate Recommendation, Evidence Level: Grade C)*

- **In priapism >36 hours, it is unlikely the acute ischemic event will resolve with local aspiration and ICI therapy with phenylephrine alone.**

Diagnosis: Imaging

- Imaging should **not** be incorporated into the acute evaluation and management of priapism.

- Imaging may be utilized in less clearly delineated cases to differentiate between acute ischemic from non-ischemic priapism.
  - ✓ In the non-acute setting, PDUS may identify anatomical abnormalities, such as a cavernous artery fistula or pseudoaneurysm, in men who already have the diagnosis of non-ischemic priapism.

- MRI is unlikely to have a role in the initial diagnostic and treatment phase of priapism.

Surgical Management

11. Clinicians should perform a distal corporoglanular shunt, with or without tunneling, in patients with acute ischemic priapism who have failed pharmacologic intracavernosal reversal and aspiration, with or without irrigation. (*Moderate Recommendation, Evidence Level: Grade C)*

12. In patients with acute ischemic priapism who failed a distal corporoglanular shunt alone, clinicians should consider corporal tunneling*. (Moderate Recommendation, Evidence Level: Grade C)*

Goals of Shunt Surgery

- Resolution of Pain.
- Preserve quality of life without side effects.
- Re-oxygenate Erectile Tissue.
  - ✓Prevent Penile Fibrosis
  - ✓PRESERVATION OF ERECTILE FUNCTION

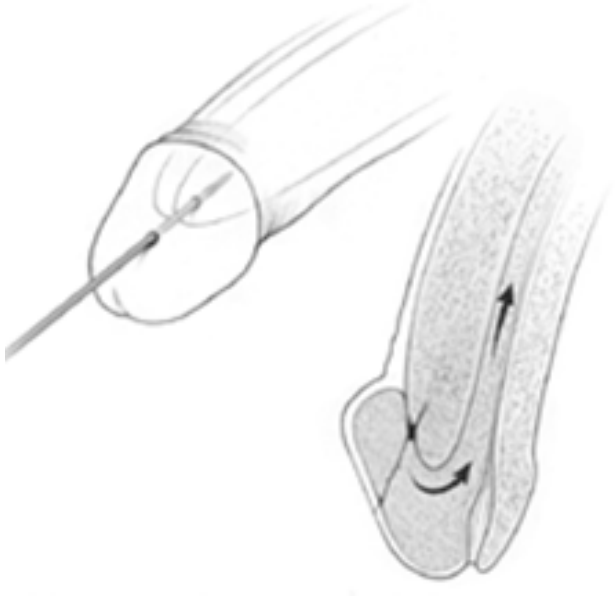
Surgical Management

- There are no studies comparing shunting alone versus shunting with tunneling, but studies on shunts with tunneling demonstrate generally high rates of immediate success at relieving priapism.

  - ✓ The addition of tunneling is associated with higher rates of ED compared to distal shunting alone.
  - ✓ reported side effects for distal shunting and tunneling include urethral injury, cavernositis, fistula, infection, and penile skin necrosis

Winter Shunt (12-24hrs)

- ***Biopsy needle*** through glans into corporal cavernosa
- May be passed multiple times bilaterally
- 33-92.3% failure to achieve detumescence

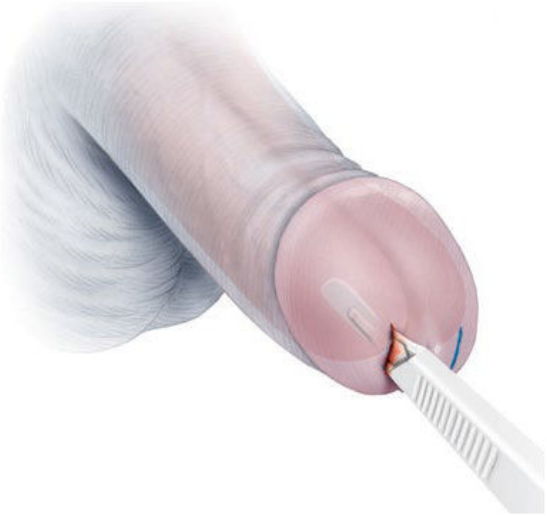


Burnett AL, Bivalacqua TJ
Urol Clin North America 2011; 38:185-194

Montague et al. Guideline on the Management of Priapism, J Urol. 2003;170:1318-24
Nixon et al, J Urol 2003;170:883-6

Ebbehøj Shunt (12-24hrs)

- ***Surgical blade*** through glans into corporal tip
- May be passed multiple times bilaterally
- 27% failure to achieve detumescence

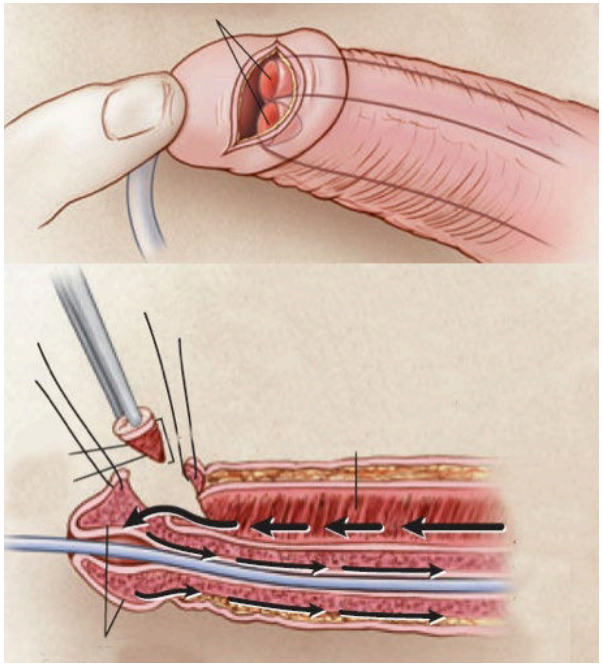


Garcia MM et al., BJU Int 2008;102:1754-64

Montague et al. Guideline on the Management of Priapism, J Urol. 2003;170:1318-24

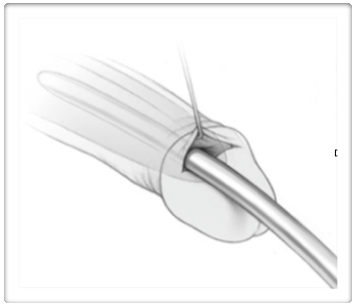
Al Ghorab Shunt (>36hrs)

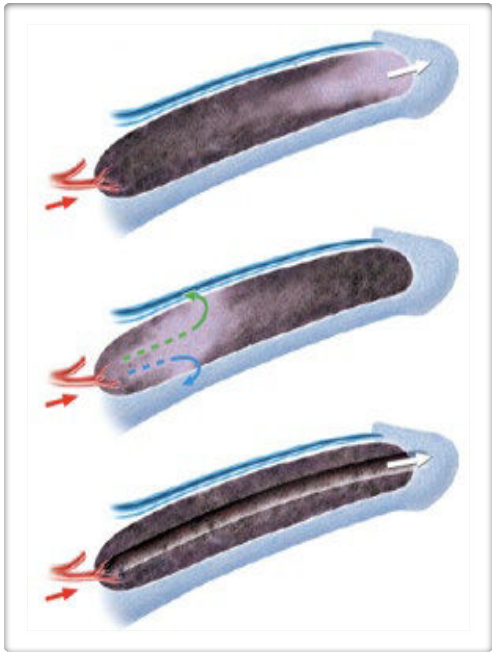
- Dissection and removal of tip of corpora cavernosa to facilitate drainage.
- Dissection is carried down to the bulging corporal bodies.
- A 5-mm ellipse is excised from the tips of the corporal bodies and the dark old blood is drained from the corpora cavernosa.
- 27% failure to achieve detumescence



Lue TF, Pescatori ES. Distal cavernosum-glans shunts for ischemic priapism. J Sex Med 2006; 3 : 749-52.

Distal Shunt Modification



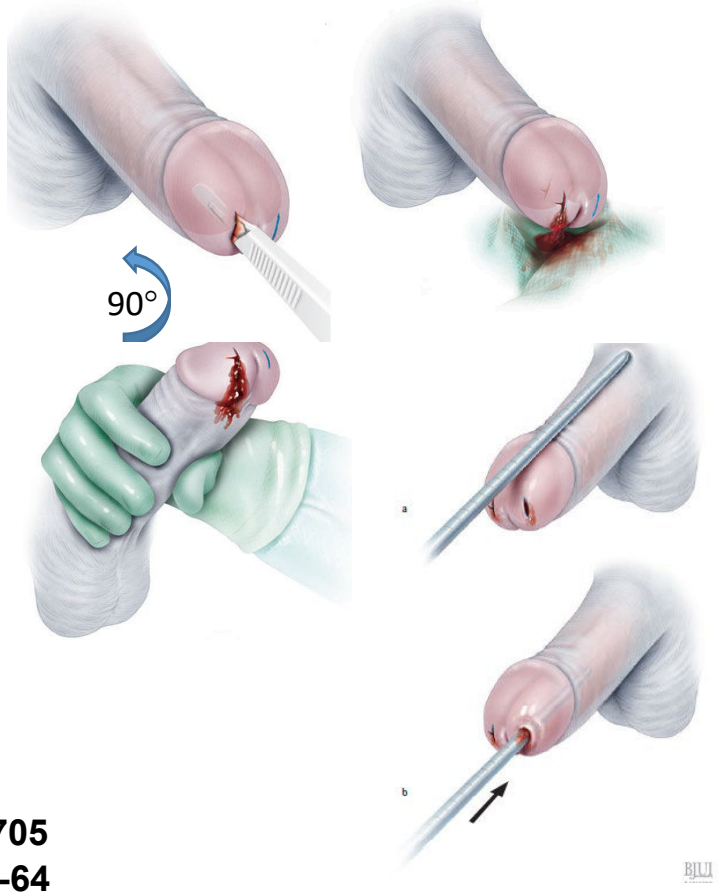


- In prolonged priapism there is severe edema and necrosis within the corpora cavernosa.
- Distal shunts do not adequately drain the proximal corpora, and proximal or venous shunts do not adequately drain the distal corpora.
- Re-establishment of corporal blood circulation requires a large shunt and an intracavernous tunnel, as the case in the T-shunt with Tunneling or the Burnett “Snake” maneuver.

Garcia MM, Shindel AW, Lue TF. T-shunt with or without tunneling for prolonged ischaemic priapism. BJU Int 2008; 102 (11): 1754-64.
Burnett AL, Pierorazio PM. Corporal “Snake” maneuver: corporglanular shunt surgical modification for ischemic priapism. J Sex Med 2009; 6:1171-74.

T-Shunt with Tunneling (>24hrs)

- Urethral sound
- May be done under local anesthesia
- Unilateral/bilateral ± intracavernous tunneling
- Mean priapism duration 81 hrs (18-288hrs)
- 11/13 patients achieved definitive detumescence[1]
  - 2 required 2nd tunneling procedure
- No change in glans sensation

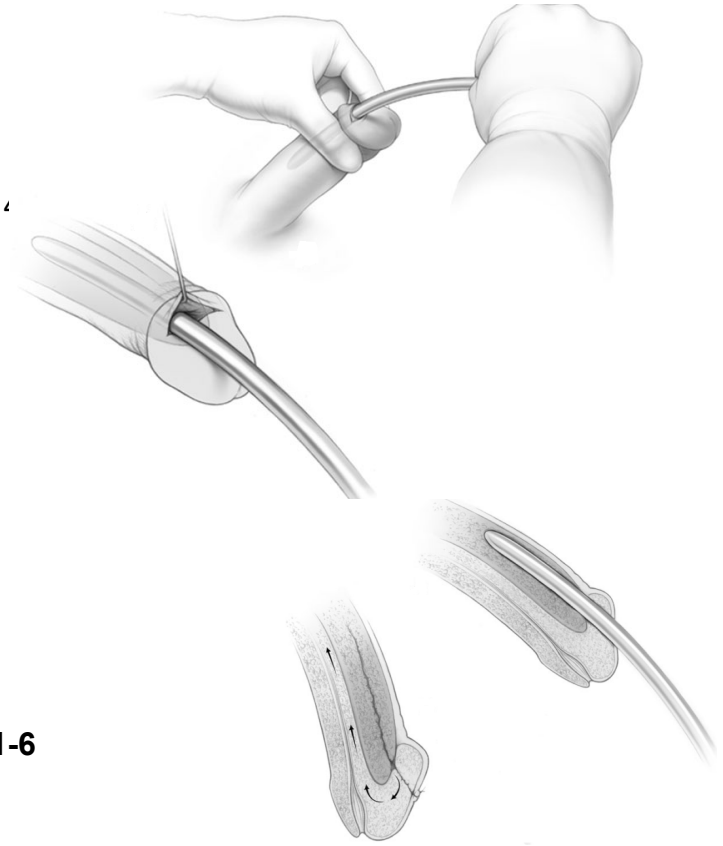


1) Brant et al. J Urol 2009;181: 1699-1705

2) Garcia et al., BJU Int 2008;102:1754-64

Burnett “Snake” Maneuver(>36hrs)

- **Useful as salvage procedure**
- 7/8 Hegar dilator
- Priapism duration: 75h (24-288h)[2]; 67h (36-96h)[3];120-168h[1]
- +/- cavernosotomy[4]
- Successful detumescence
  - 8/10[2]; 12/12[3]; 2/2[4]
- Complications: urethral injury (urethrocutaneous fistula), wound infection, glanular skin necrosis



1) Burnett & Pierorazio: J Sex Med 2009;6:1171-6
2) Segal et al.: J Urol 2013;189:1025-9
3) Lian et al: J androl 2010;31:466-71
4) Shiraishi & Matsuyama: J Sex Med 2013;10:599-602

Comparison of Tunneling Maneuvers

Advantages

- T-Shunt
  - May be done under local anesthesia
  - Patients do not require hospital admission
- “Snake”
  - May easily proceed to more vigorous tunneling if detumescence does not occur initially with larger distal shunt.

Disadvantages

- T-Shunt
  - More complex shunting may be delayed if performed as a local aneshesia.
- “Snake”
  - Requires general anesthesia
  - Requires hospital observation
  - Invasive with potential for higher complication rate

Surgical Management

13. Clinicians should counsel patients that there is inadequate evidence to quantify the benefit of performing a proximal shunt (of any kind) in a patient with persistent acute ischemic priapism after distal shunting. (*Moderate Recommendation, Evidence Level: Grade C)*

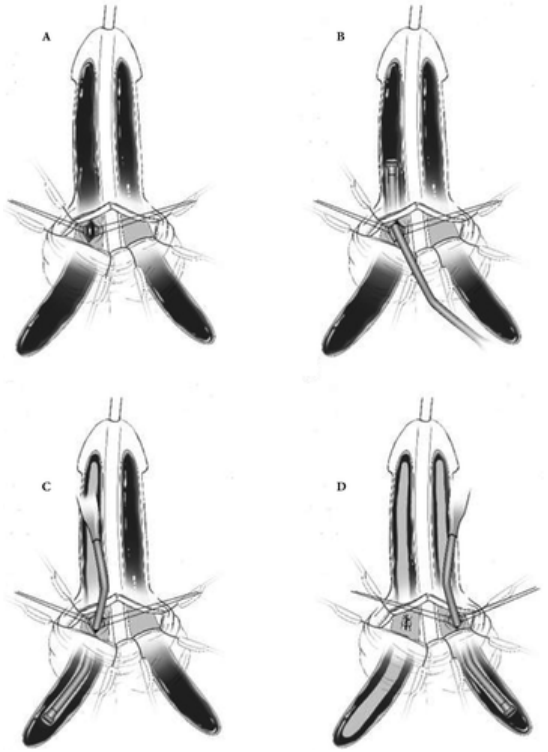
Surgical Management

- Proximal shunting represents a historical procedure that has largely been replaced by distal shunts with tunneling procedures.

- A proximal shunt should only be considered after failure of more established, conservative procedures, including distal shunting with tunneling.

Penoscrotal decompression for priapism

- Retrospective review multi-institution of 25 patients who underwent a total of 27 PSD procedures.
- The mean duration of priapism at initial presentation was 71.0 h.
- corporoglanular shunt treatment in 48.0% of patients (12/25).
- Of the 10 patients who underwent unilateral PSD, two (20.0%) had priapism recurrence.
- Among the 15 patients undergoing primary bilateral PSD, none had priapism recurrence.
- Of the 15 patients with documented sexual function status at last follow-up, nine (60%) reported spontaneous erectile function adequate for penetration, while six (40%) reported ED.



Baumgarten A et al. BJU Int 126:441-446, 2020

Penile Prosthesis

- Clinicians may consider placement of a penile prosthesis in a patient with untreated acute ischemic priapism greater than 36 hours or in those who are refractory to shunting, with or without tunneling. (*Expert Opinion)*

- In a patient with acute ischemic priapism who is being considered for placement of a penile prosthesis, clinicians should discuss the risks and benefits of early versus delayed placement. (*Moderate Recommendation, Evidence Level: Grade C)*

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Penile Prosthesis

- Shunting, with or without tunneling, may provide detumescence for many patients, but some will be refractory.

- Some shunting patients will experience severe ED secondary to ischemia resultant fibrosis, and/or from the surgical intervention(s).

- Men in need of detumescence for pain relief and hoping to salvage a functional erection for the future can be considered for placement of a penile prosthesis.

Penile Prosthesis

- Available data suggest that prosthesis are effective in:
    - Causing detumescence
    - relief of pain
    - preservation of penile length
    - return to sexual activity
    - overall satisfaction
- Infection rates were below 10% for all studies reviewed.

Penile Prosthesis: Early versus Delayed

- Reoperation rate was similar for early and delayed placement and rates of erosion, malfunction or failure, and penile curvature were low for all patients.

- Penile shortening was higher for delayed placement, and loss of length was related to patient dissatisfaction.

Placement of penile prosthesis in the acute management of ischemic priapism

- **Decision Making:**
  - Patient has failed aspiration and sympathomimetic intracavernous injection.
  - Patient has failed distal shunting with tunneling.
  - Ischemia has been present for > 36 hours.
- **Considerations:**
  - There is no corporal fibrosis and dilation is possible to place standard sized cylinders.
  - There are higher rates of revision surgery and infections noted in priapism cases.
    - Multiple aspiration and or irrigation attempts
    - Weakening's to tunica albuginea distal and proximal

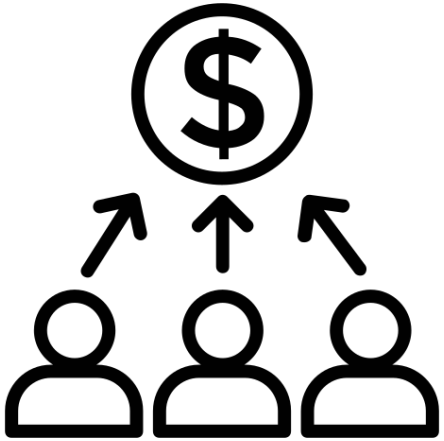
Guidelines are Ambiguous

- There is benefit to delaying treatment especially when shunts are used
- Malleable prosthesis has greater risk of erosion, requires 2nd operation in patients with distal shunt surgery and placement of prosthesis
- In delayed placement, there is no defined consensus as to onset of corporal fibrosis
- Cycling of 3-piece IPP
  - Early associated with pain due to edema and bruising
  - Delayed associated with penile curvature and shortening

Penile Prosthesis

- Placement of a penile prosthesis in the setting of acute ischemic priapism must be made after weighing multiple factors:
    - the quality of the history provided relative to duration of persistent priapism
    - overall condition of the patient
    - **health literacy and comprehension**
    - **physician experience**

Cost considerations



- Repeat hospitalizations
- Number of operations
- Reimbursement for prostheses
- Impact of immediate postoperative complications (90 days)

One size doesn’t fit all….

- Risks vs benefits
- Delay in prosthesis implantation may be justified
- Patient satisfaction
- Raising awareness about the future need for prosthesis

Summary

- Today, there are multiple surgical options for detumescence following acute ischemic priapism
  - ✓Tunneling offers an excellent way to decompress the corporal bodies and provide symptomatic relief
  - ✓Most patients will suffer from severe ED in the future and will necessitate an IPP.
  - ✓Proper counseling about the surgical options is paramount and consideration for transfer to tertiary facility should be considered.

Acknowledgments

SMSNA and Guidelines panel

Q and A
(Entire Panel)

THANK YOU!

Case-Based Approach to Understanding the AUA/Sexual Medicine Society of North America Sexual Medicine Guidelines