Adult Male Hypogonadism
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Etiology and Clinical Features
- Increase with age
  - Loss of 1-2% per year starting at 30 y.o.
- Long term health complications
  - Increase body fat
  - Loss of body muscle mass
  - Loss of bone mineral density
  - Fatigue
  - Depression
  - Decreased libido
  - Memory loss

Co-Morbid Medical Conditions
- Diabetes
- AIDS
- Substance Abuse
- Chronic Liver Disease
- COPD

Diagnosis
- Androgen Deficiency
  - (<300 ng/dl) – diurnal variation
- Signs and Symptoms – Can be very non specific
  - Irritability
  - Chronic Fatigue
  - Loss of libido

TRT in younger population
- Larger number of younger patients being diagnosed
- VERY careful with younger patient
- TRT is a VERY POTENT contraceptive
  - Potentially irreversible
  - Via negative loop inhibition of pituitary-hypothalamic axis
- Seek other ways of increase endogenous T
  - Clomiphene citrate; hCG; Aromatase Inhibitors

Treatment Options
- 5 testosterone gels on the market (2 ten years ago)
- T pellets
- T patches
- New long-lasting T—undecanoate injection approved 2014
- Many in pipeline
Intramuscular Injections (short acting)

- Currently Most Popular (oldest, cheapest)
- Injections 2-3 weeks
- Peak and trough levels
- Require frequent doctor visit or teaching (IM injection)

Transdermal Gels

- Skin reaction (4-10%)
- Daily Compliance
- Risk of transfer to another person (partner, child)

Subdermal (Testosterone implants)

- Minor surgical procedure (q3-4 mos)
- Steady levels
- No daily compliance issues
- No risk of transfer
- Risk of infection/extrusion

Intramuscular Injection (long acting)

Monitoring Replacement

- 3 months after initiation of TRT and then every 6-12 months
  - T
  - PSA/DRE
  - H&H (therapeutic phlebotomy)
  - LFTs

Benefits TRT

- Improved sexual drive
- Improved energy and cognition
- Improved QOL
- Reduced body fat
- Improved muscle mass
  - Minimal change in BMI as fat replaced by lean muscle mass
TRT anf CV Risk – Vingen et al

- Retrospective analysis 8,709 men at the VA undergone coronary angiography
- Among men with T<300 ng/dL Reported increased rate of MI, CV, death in those with TRT as opposed to those without
  - Complex statistical analysis with more than 50 variables
  - However the raw data shows opposite risk lowered by half from 21.2% to 10.1%
  - Excluded 1,132 men with CVA or MI before they received TRT (if not excluded, result would have been reversed)

TRT anf CV Risk – Finkle et al

- Retrospective analysis of 55,593 men
  - Primary reported result – increased rate of non-fatal MI 90 days after filling T script compared to prior 12 months
  - Reported increased rates in men older than 65 without hx cardiac disease and younger than 65 with hx of cardiac disease
  - Conclusion – substantially increased risk in both groups
  - Very statistical
  - Retrospective

FDA Decision

- July 14th 2014 – denied public citizen’s petition of Drs. Sidney Wolfe and Michel Carome to add black box warning of cardiovascular dangers to T drugs

Low levels of T and CV risks

- Obesity
- Diabetes
- Metabolic Syndrome
- Two retrospective studies
  - Reduced mortality by half in hypogonadal men on TRT vs. none
Sexual Medicine Society NA Position Statement

There is no reason to change the current management of men with testosterone deficiency on the basis of these recent articles. Men currently being treated for testosterone deficiency with testosterone therapy and experiencing benefits may continue treatment. Men diagnosed with testosterone deficiency should consider treatment with testosterone therapy after full discussion with their healthcare provider. Testosterone therapy provides significant benefits for men with sexual symptoms, and also for a variety of non-sexual symptoms. Like all medical treatments, testosterone therapy is associated with risks, and these should be discussed with one’s healthcare provider. Weighing the entirety of available medical research, there is no compelling evidence that testosterone therapy increases cardiovascular risks.

World Experts and Androgen Study Group Petition JAMA

BOSTON, March 25, 2014 /PRNewswire/ — Three professional medical societies and a highly distinguished international group of over 130 scientists and concerned physicians have petitioned the Journal of the American Medical Association to retract the article that precipitated recent concerns regarding cardiovascular risks with testosterone therapy. In a letter addressed to the editor-in-chief of JAMA, Dr. Howard Bauchner, the group cites “gross data mismanagement,” rendering the article “no longer credible.” The article by Rebecca Vigen and colleagues was published in the November 13, 2013 issue of JAMA, entitled “Association of Testosterone Therapy With Mortality, Myocardial Infarction, and Stroke in Men With Low Testosterone Levels.” The results of this article were widely reported as new evidence that testosterone therapy is associated with cardiovascular risks, resulting in a Food and Drug Administration safety bulletin issued January 31, 2014. The retraction letter was written by the Androgen Study Group.

Questions?

Erectile Dysfunction
Erectile Dysfunction (ED)

What is it?

- The inability to maintain an erection firm enough to have sexual intercourse

How prevalent is it?

- ~1 in 5 American men >20 years old
- Over 30 million American men

Main Physical Causes of ED

PDE-5 INHIBITORS

- Sildenafil -- Viagra
- Tadalafil -- Cialis
- Vardenafil -- Levitra
- Avanafil -- Stendra

Oral Prescription Medications

- Effective in approximately 70-80% of cases
- Works in response to sexual stimulation
- Usually taken within 1 hour before anticipated sexual activity
- Typically works for up to 4 hours ("36 hours with Cialis")
- Not to be taken more than once a day
- Some oral medications’ efficacy can be affected by food

What Happens When The Pill Fails???
Vacuum Constriction Device

Externally applied device mechanically effects penile blood engorgement

Cylinder/pump placed over penis creates closed chamber, pump slowly creates vacuum, drawing blood into corpora cavernosa

Constrictive elastic ring then placed (max 30 minutes) at base of penis to restrict blood flow out of penis

Product Characteristics

- Non-invasive
- Drug free
- Cost effective

Adverse Events

- Erection is not warm to the touch different color
- Bruising/burst blood vessels
- Penile pain/discomfort

Intraurethral Alprostadil (MUSE®)

Alprostadil suppository (MUSE®*)

Alprostadil chemically identical to prostaglandin E

- Vasodilatory effects increase blood flow to penis

Product Characteristics

- No needles or injections
- Erection within 10 to 15 minutes
- Must be refrigerated

Adverse Events

- Pain - penis, urethra or testes
- Urethral bleeding/spotting
- Hypotension
- Dizziness

Intracavernous Injection Therapy

Alprostadil (Caverject®) most widely used agent

Trimix (compounded) Alprostadil, Papaverine, Phentolamine

Injected directly into corpora cavernosa

Product Characteristics

- On-set of erection within 5 to 20 minutes

Adverse Events

- Penile pain
- Prolonged erection
- Penile fibrosis
- Injection site hematoma (contraindicated in anticoagulated patients

Penile Implants

An option for men who have tried other treatments without success.

On the market for over 30 years
Over 300,000 implants to date
High patient and partner satisfaction rates reported in clinical studies

Three-Piece Inflatable Penile Implant

Product Characteristics
- Totally concealed in body
- Device is inflated to provide rigidity and deflated for concealment
- Erection longevity is controllable
- When deflated, the cylinders are soft and flaccid
- Expands in girth (all AMS 700® cylinders) and length (AMS 700, LGX® and Ultrex® cylinders)
- AMS 700 with InhibiZone® (Rifampin and Minocycline) is the only inflatable penile prosthesis with clinical evidence showing a significant reduction in the rate of revision due to infection

Adverse Events
- Will make latent natural or spontaneous erections as well as other interventional treatment options impossible
- If an infection occurs, the prosthesis may have to be removed (reduced from 3% to less than 1% with InhibiZone)
- May cause the penis to become shorter, curved or scarred
- There may be mechanical failures of the prosthesis
- Urogenital pain (typically associated with healing process)

Penile Implant Recommended by Patients & Partners

Implants are Highly Recommended

93% of patients would recommend to others
96% of partners would recommend to other couples in similar situations
Summary: Penile Implant Surgery

Penile implants have been used for over 30 years.
Penile implants may be an option for men who fail less invasive approaches to ED treatment.
Penile implants can offer satisfaction for patients and partners as reported in clinical trials.

Insurance Coverage of IPPs

The Centers for Medicare and Medicaid (CMS) has a National Coverage Decision (NCD) which includes the implementation of a penile prosthesis as a treatment alternative for erectile dysfunction when medically necessary.

Private payer coverage for penile prosthesis varies based upon insurance company and patient-specific benefit plans.

Questions?