Men's Health
47th Annual Winter Refresher Course
Family Medicine, MCW

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February 1-3, 2017

Disclosures

- None

Men's Health

- General Overview
- Male sexual dysfunction (ED)
- ED treatments
- Prostate cancer evaluation

Men's Health

- “Recognizing and preventing men’s health problems is not just a man’s issue... because of its impact on wives, mothers, daughters, and sisters. Men’s health is truly a family issue.”

Are men the weaker sex?

- American men typically die almost six years before women do
- The male fetus is at greater risk of miscarriage and stillbirth
- Male births slightly outnumber female births (about 105 to 100), but boys have a higher death rate if born premature: 22% compared with 15% for girls
- Overall, more newborn males die than females (5 to 4)
- Sudden infant death syndrome is one and a half times as common in boys as in girls
- Boys are 3 to 4 times as likely to be autistic
- (New York Times Magazine --- 3.15.03)

Are men the weaker sex?

- Boys are 3 times as likely to have Tourette’s syndrome
- Mental retardation afflicts 1.5 times as many boys than girls
- Dyslexia is diagnosed 2-3 times as often in boys than girls
- As teenagers, boys die at twice the rate of girls
- Boys ages 15-19 are almost 11 times as likely to die by drowning
- Boys ages 16-19 are nearly twice as likely to die from a car accident
There’s more:

- Men suffer hearing loss at twice the rate of women
- The male hormone testosterone is linked to elevations of LDL, as well as declines in HDL.
- Men have fewer infection-fighting T-cells and are thought to have weaker immune systems than women
- Men have a higher death rate from pneumonia and influenza than women

And more…

- Stroke, cancer, diabetes, heart disease and accidents—all among the top causes of death—all among the top causes of death—kill men at a higher rate than women
- In the USA, men are twice as likely to die from parasite-related diseases
- Men ages 55-64 are twice as likely as women to die in car accidents
- Men 55-74 are twice as likely as women to die of heart disease
- Among people 65 and older, men account for 84% of suicides

How can we explain some of this?

- Preventative Health Care
- Attitudes towards health
- Stoicism
- Attitudes towards health care system
- Lack of Information on Men's Health
- Attitudes towards lifestyle behaviors
- Work-related issues

Erectile Dysfunction (ED)

- Psychological
- Neurologic
- Normal Functioning
- Hormonal
- Vascular

ED Neural Influences

- Psychogenic erections
  - imagery. Visual or auditory. Parasympathetic system is opposed to fight and flight. Orthostatic changes to vascular system. Then to the pelvic muscle (bulbum and corpora cavernosa)
  - Common in the young
- Reflex erections
  - Tactile stimulus. Activates reflex arc S2-S4 (sacral erection center)
  - Common in mature years
- Nonsexual nocturnal erections
  - -3-4x per night
  - -during REM
  - -persist thru life
  - -not tightly coupled to REM in older adults

Nitric oxide

- Intrapenile NO is a local neurotransmitter for vasodilation
- Arg + NADPH + Oxygen \rightarrow NO + Citrulline
  - nitric acid synthase
- low nitric oxide synthase found in cigarette smokers, DM and in testosterone def
Hormonal influences

- Testosterone acts through psychogenic channels to enhance libido
- It is needed to maintain nitric oxide synthase levels

Age as a factor

- Affected by age, health status and gender
- Men more likely to be sexually active
- Gender differences with age (esp. 75-85)
  - 39% men vs 17% women were sexually active at ages 75-85. Hmmm!!

Sexual Dysfunction epidemiology

- Epidemiology
  - Appears in early 40s and increases with age
  - At age 40, 40% acknowledged some functional impairment. This increased by 10% each decade
  - Age affects most domains: intercourse, erection frequency, libido, satisfaction and orgasm

ED - causes

- Decreased libido
- Medications: ssri, anti-androgens, opioids, 5 alpha reductase inhibitors, blood pressure medications
- Alcoholism
- Depression
- Fatigue
- Drugs
- Testosterone deficiency
- Relationships

ED prevalence and risk factors

- Erectile Dysfunction
- Prevalence
  - Most common problem of sexual function is ED
  - Multi-national studies in 8 countries ages 27-75 overall prevalence 18%, ages 20-30 8%, 70-75 37%
- Risk Factors
  - Exercise associated with lower risk
  - Obesity, smoking, watching television, presence of comorbid conditions associated with higher risk
  - Obese men with ED, weight loss and increased physical activity associated with improvement in 1/3 of patients
  - Independent risk factors
    - Obstructive Sleep Apnea
    - restless leg syndrome

ED and CVD

- Association with Cardiovascular Disease
  - ED and CV Disease share many risk factors
  - Pathophysiology mediated through endothelial dysfunction
  - ED may be an early sign for Cardiovascular events
- Five Year Study of 9,000+ men over the age of 55 (Prostate Cancer Prevention Trial)
  - Men with ED without an obvious cause, no symptoms of CAD, or vascular disease should be screened for Cardiovascular Disease prior to initiating therapy for their sexual dysfunction
ED – drug associations

- Drugs
  - Antidepressants
  - Spironolactone
  - Sympathetic blockers such as chlonidine, guanethidine, or methyldopa
  - Thiazide diuretics
  - Ketoconazole
  - Cimetidine, but apparently not ranitidine or famotidine

ED – other factors

- Other Factors
  - Psychological
  - Neurologic
  - Bicycling
  - Endocrine disorders

Erectile Dysfunction

Treatments

- General Principles
  - Therapy of men with sexual dysfunction is aimed at improving libido and addressing the two vital sexual functions: the capacity to acquire and sustain penile erections and treating premature ejaculation (PE)

Male Sexual Dysfunction

Treatments

- ED Therapies
  - Oral phosphodiesterase-5 (PDE-5) inhibitors
  - Penile self-injections
  - Intra-urethral therapies
  - Vacuum devices
  - Penile prostheses

Erectile Dysfunction

Treatments

- Male patient diagnosed with ED
- Oral ED therapies (PDE-5 inhibitors)
- Urethral suppository
- Injectable (alprostadil)
- Vacuum pump
- Penile implant
- OR
- Corrective vascular surgery

Erectile Dysfunction

Adverse effects/precautions of therapies

- Adverse Effects and Precautions of Medical Therapies
  - PDE-5 inhibitors are contraindicated in patients taking nitrates
  - Nitrate treatment should be delayed in patients who have taken PDE-5 inhibitor and develops chest pain
  - The delay should be 24 hours for sildenafil or vardenafil; 48 hours for tadalafil
  - Pulmonary hypertension drugs together with PDE-5 inhibitors need to be used cautiously
Erectile Dysfunction
Therapy side effects

- Common Side Effects of PDE-5 Inhibitors
  - Visual Effects – nonarteritic anterior ischemic optic neuropathy
  - Hearing Loss
  - Melanoma Risk
  - Drug interactions

Erectile Dysfunction
causes

- Causes of Decreased Libido
  - Psychological
  - Low testosterone
  - Other sexual issues; ED, PE, Peyronie's disease
  - Medications
  - Problems with partner

Erectile Dysfunction
Main Points

- Identify underlining etiology and treat as necessary
- Treat cardiovascular risk factors; reduce smoking, obesity, hypertension, dyslipidemia, diabetes
- First line medical therapy of ED is PDE-5 inhibitors
- PDE-5 inhibitors contraindicated in patients taking nitrates
- Alpha-adrenergic antagonists not to be used with PDE-5 inhibitors when possible (tamsulosin 0.4 mg/day appears safe with tadalafil if used, must limit dosage)
- Testosterone replacement therapy is suggested only in men with documented hypogonadism

Prostate Cancer Screening

- Most commonly diagnosed visceral cancer in 2016
- 2nd only to non-melanoma skin cancer and lung cancer as the leading cause of cancer and cancer death
- Risk for developing prostate cancer is 16%; Risk of dying from prostate cancer is 2.9%
- 60% of men by age 80 have prostate cancer on autopsy series

Prostate Cancer Screening

- Prostate Specific Antigen (PSA)
  - PSA produced by prostate epithelial cells
  - In cancer state, PSA is elevated b/c tissue barrier between prostate gland lumen and capillaries are disrupted
  - PSA elevation can precede clinical disease by 5-10 years
  - PSA also elevated in benign conditions
Prostate Cancer Screening

Benign Causes for Elevated PSA

<table>
<thead>
<tr>
<th>Condition</th>
<th>Impact on PSA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Benign prostatic hyperplasia</td>
<td>May take 6-8 weeks to normalize</td>
</tr>
<tr>
<td>Acute prostatitis</td>
<td>May take 6-8 weeks to normalize</td>
</tr>
<tr>
<td>Subclinical inflammation</td>
<td>Median rise 7.9 ng/mL (resolves 2-4 weeks)</td>
</tr>
<tr>
<td>Prostate biopsy</td>
<td>Median rise 7.9 ng/mL (resolves 2-4 weeks)</td>
</tr>
<tr>
<td>Cystoscopy</td>
<td>PSA drops 50% 2 days into treatment</td>
</tr>
<tr>
<td>TURP</td>
<td>Median rise 5.9 ng/mL (resolves 2-8 weeks)</td>
</tr>
<tr>
<td>Urinary retention</td>
<td>0.8 ng/mL</td>
</tr>
<tr>
<td>Ejaculation</td>
<td>0.26-0.4 ng/mL</td>
</tr>
<tr>
<td>Digital rectal examination</td>
<td>0.26-0.4 ng/mL</td>
</tr>
<tr>
<td>Perineal trauma</td>
<td>0.26-0.4 ng/mL</td>
</tr>
<tr>
<td>Prostatic infarction</td>
<td>0.26-0.4 ng/mL</td>
</tr>
</tbody>
</table>

Improving the accuracy of PSA

- PSA Velocity > 0.75 ng/mL/year → increased risk
- Free PSA
  - Ratio of free to total PSA decreased in prostate cancer
- Pro-PSA (p2PSA)
  - A specific isoform of the PSA proenzyme (Pro-PSA)
  - Prostate Health Index derived from % p2PSA, free PSA and total PSA
  - No high level clinical evidence supporting these recs

Four Kallikrein Assays (4k score)

- Based on total PSA
- Free PSA
- Intact PSA
- Human Kallikrein related peptidase 2
- Age, DRE, and previous biopsy results
- Uncertain usefulness

Age and race specific reference ranges

- Black men highest incidence of prostate cancer
- Utility remains uncertain

Digital Rectal Exam

- No controlled studies have shown a reduction in mobility or mortality

Other Tests

- Prostate Cancer Antigen-3 Gene (PCA3)
  - Score based on urine

Approach to Screening

- ACP and ACS
  - Absolute risk reduction is small
  - Potential risks
    - For patients willing to take risk can undergo testing
  - Informed decision making: ACP and ACS provide useful summaries
    - CA Cancer J Clin 2010; 60:70
    - Ann Intern Med 2002; 137:192
    - Ann Intern Med 1997; 126:480

Overdiagnosis

- Detection by screening of condition that would not have become clinically significant

Risks of Therapy

- For patients willing to take risk can undergo testing
- Informed decision making: ACP and ACS provide useful summaries
- CA Cancer J Clin 2010; 60:70
- Ann Intern Med 2002; 137:192
- Ann Intern Med 1997; 126:480
Prostate Cancer Screening

- Age to begin screening
  - Discuss at age 50
  - Unless life expectancy <10 years
- Men at high risk, black men, and men with BRCA1 or BRCA2 mutations; begin screening at age 40
- Frequency of testing
  - Current date supports 2-4 years with PSA alone

When to Refer

- If DRE is abnormal
- If PSA > 7
- PSA 4-7, repeat 6-8 weeks later
- If > 4, refer

When to stop screening

- Stop if life expectancy < 10 years
- USPSTF – no screening
- Canadian Task Force – no screening
- UK National Screening Committee – no screening
- European Society for Medical Oncology – no screening
- ACP and AUS informed testing at 50 and stop at 69

Prostate Cancer Screening

Main Points

- Discussions should present men with information on the risk and benefits of screening
- Start screening at age 50
- Screen with PSA alone every 2-4 years
- Stop screening at age 69
- Men with abnormal DRE (if done) or if PSA is greater than 7 should be referred
- PSA 4-7; undergo repeat testing several weeks later
- PSA velocity, age, and race are not needed for biopsy referral

Men’s Health

Bibliography

- UpToDate.
  - Screening for prostate cancer
  - Overview of male sexual dysfunction
  - Treatment of male sexual dysfunction