Hormone Therapy for Transgender Patients

When  Why  How

UI Family Medicine Refresher Course
April 14, 2015
Introduction

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www.uilgbtqclinic.com
Disclosures

• “Within the past twelve months, I have not had any financial relationships with the manufacturers of health care products.”

• “I WILL discuss pharmaceuticals, medical procedures, or devices that are investigational or unapproved for use by the FDA.”
  • Medications and surgeries used to treat gender dysphoria
Objectives

- Describe *when* hormone therapy is indicated for transgender and gender non-conforming patients
- Explain *why* treatment with hormones is needed in this population
- Understand *how* to competently prescribe hormone medications to treat gender dysphoria
Transgender/Trans* Terms

• **Female To Male** → Transman
• **Male To Female** → Transwoman
• Non-binary

• Transition
  • Process of moving from one gender to another

• “Transsexual” is considered offensive by some
The Identity Spectrums

- **Biologic Sex**: male (man) to female (woman)
- **Gender Expression**: masculine to feminine
- **Gender Identity**: man to woman
- **Non-binary person**
Transgender Demographics

• Using broader definition of self-identifying as transgender
  • Massachusetts 2007-2009 phone interviews
  • 0.5% prevalence
    • 1/200 people
    • Average patient panel of 2500 = 12 transgender patients

• UI LGBTQ Clinic
  • October 2012-March 2015
  • Over 150 unique trans* identified patients
  • ~75% from outside of Johnson County
Case 1- “John”

- John Olson is a 23 yo assigned sex at birth male establishing care
- PMH: Depression and anxiety
- SH: Smokes ½ ppd, occasional EtOH, sexually active with females
- Meds: fluoxetine 20 mg daily
Case 1- “John”

- Patient states that they identify as a transwoman
- Notes feelings of worsening dysphoria related to secondary sex characteristics
- Remembers preferring feminine play, toys, dress as a school age child
- Still using given name and male pronouns
- Has come out to online friends
- Wants to start hormone therapy ASAP
Making the Diagnosis

*DSM 5- Gender Dysphoria*

- Criterion A:
  - Incongruence between one’s experienced gender and assigned gender
    - 6 months or longer
    - Need 2 of 6 indicators (see next slide)
Criterion A Indicators (need 2 of 6)

- Incongruence between one’s experienced gender and primary and/or secondary sex characteristics
- Desire to be rid of one’s primary and/or secondary sex characteristics
- A strong desire for the primary and/or secondary sex characteristics of the other gender
- A strong desire to be of the other gender
- A strong desire to be treated as the other gender
- A strong conviction that one has the typical feelings and reactions of the other gender
Gender Dysphoria

• Criterion B:
  • Distress or impairment in social, occupational functioning
  • Increased suffering, distress or disability
DSM V: Gender Dysphoria

“Gender nonconformity is not in itself a mental disorder. The critical element of gender dysphoria is the presence of clinically significant distress associated with the condition.”
Transgender Care Guidelines

• World Professional Association for Transgender Health (WPATH)
  • Standards of Care for the Health of Transsexual, Transgender, and Gender Non-Conforming People, 7th version, released 2011.

• Criteria for Feminizing/Masculinizing Hormone Therapy
  • One referral or chart documentation of psychosocial assessment
    • Persistent, well-documented gender dysphoria
    • Capacity to make an informed decision and give consent
    • 18 years of age
      • if younger, follow the SOC for children and adolescents
    • Controlled medical or mental co-morbidities
WPATH Recommendations for Hormones and Surgery

- Mental Health Evaluation is required
- Psychotherapy is encouraged, but not required
- Hormones and surgery may be used in any combination to suit the needs of the individual patient
SOC recommendations for letter content (please share with a therapist!)

- General identifying characteristics
- Results/diagnoses of psychosocial assessment
- Duration of patient-provider relationship, including type of evaluation and therapy/counseling to date
- An explanation that the criteria for treatment has been met and a brief rationale for supporting the patient’s request
- Statement that informed consent has been obtained from the patient
- A statement that the mental health provider is available for coordination of care

Go to [www.uilgbtqclinic.com](http://www.uilgbtqclinic.com) for sample letters and mental health provider FAQs
Informed Consent- obtained by Hormone Prescriber

- **Review risks and benefits**
- Disclose non-FDA approved use of medications
- Discuss alternatives
- Shared Decision Making
- [http://www.uilgbtqclinic.com/caring-for-transgender-patients.html](http://www.uilgbtqclinic.com/caring-for-transgender-patients.html) for sample informed consent documents
- Scan into EHR
# Estrogen Risks/Side Effects

<table>
<thead>
<tr>
<th>Risks associated with hormone therapy. Bolded items are clinically significant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Likely increased risk</strong></td>
</tr>
<tr>
<td>Gallstones</td>
</tr>
<tr>
<td>Elevated LFTs</td>
</tr>
<tr>
<td>Weight gain</td>
</tr>
<tr>
<td><strong>Hypertriglyceridemia</strong></td>
</tr>
<tr>
<td><strong>Likely increased risk with presence of additional risk factors</strong></td>
</tr>
<tr>
<td><strong>Possible increased risk</strong></td>
</tr>
<tr>
<td>Hyperprolactinemia or prolactinoma</td>
</tr>
<tr>
<td><strong>Possible increased risk with presence of additional risk factors</strong></td>
</tr>
<tr>
<td><strong>No increased risk or inconclusive</strong></td>
</tr>
</tbody>
</table>

WPATH Standards of Care, version 7.
### Testosterone Risks/Side Effects

**Risks associated with hormone therapy. Bolded items are clinically significant**

| Likely increased risk | Polycythemia  
|                       | Weight gain  
|                       | Acne  
|                       | Androgenic alopecia  
|                       | Sleep apnea |
| Possible increased risk | Elevated LFTs  
|                        | Hyperlipidemia (↑TG, ↓HDL) |
| Possible increased risk with presence of additional risk factors | Destabilization of certain psychiatric disorders  
|                                                                   | Cardiovascular disease  
|                                                                   | Hypertension  
|                                                                   | Type 2 diabetes mellitus |
| No increased risk or inconclusive | Loss of bone density  
|                                      | Breast cancer  
|                                      | Cervical cancer  
|                                      | Ovarian cancer  
|                                      | Uterine cancer |

WPATH Standards of Care, version 7.

**When**  
**Why**  
**How**
Contraindications

• **Estrogen**
  • an estrogen-dependent cancer
  • Personal history of stroke, severe PE

• **Anti-androgen (Spironolactone)**
  • Acute kidney failure or significant kidney impairment
  • Chronic hyperkalemia

• **Testosterone**
  • Pregnancy
  • Uncontrolled coronary artery disease
Case 2- “Tyson”

- Tyson is a 25 year old assigned sex at birth female interested in starting testosterone.
- Gender identity is transman. Pronouns are he/him/his.
- Has been seeing a therapist and has a letter confirming diagnosis of gender dysphoria and recommending hormones.
- Recently hospitalized for suicidal ideation and anxiety.
- Prior to admission, had come out as trans* to parents and they had been quite unsupportive.
- Attributes increasing gender dysphoria and hopelessness to his worsening mental health.
- Sertraline 75 mg daily and trazodone 50 mg qhs.
Benefits

• Hormonal Therapy and Sex Reassignment: A Systematic Review and Meta-analysis of Quality of Life and Psychosocial Outcomes
  • 28 studies
  • Improved gender dysphoria
  • Improvements in psychological functioning and comorbidities
  • Lower suicide rates
  • Higher sexual satisfaction
  • Overall improvement in the quality of life

Gender Affirming Treatment is Medically Necessary

- American Medical Association
- American Public Health Association
- American Psychological Association
- National Association of Social Workers
- American Psychiatric Association
- American College of Obstetricians and Gynecologists
- World Professional Association for Transgender Health
AMA, 2008

• “An established body of medical research demonstrates the effectiveness and medical necessity of mental health care, hormone therapy, and sex reassignment surgery as forms of therapeutic treatment for many people diagnosed with GID”

• RESOLVED, That our American Medical Association support public and private health insurance coverage for treatment of gender identity disorder as recommended by the patient’s physician.
Discrimination in Health Care

- Refusal of care: 19%
- Lack of Provider knowledge: 50%
- Postponing medical care: 28%

Case 2 Continued- “Tyson”

- You start Tyson on testosterone cypionate 50 mg SQ weekly.
- 3 month follow up visit:
  - PHQ9 score is 4
  - No suicidal or self harm ideation
  - Notes multiple physical changes
  - Reports feeling a sense of comfort with his body
  - Decreased dysphoria
This sounds familiar…..

- Hormone replacement therapy
- Contraception
  - Estrogen and progesterone
- Male hypogonadism
  - Testosterone products
## “Off-Label” Drug Use

<table>
<thead>
<tr>
<th>MEDICATION</th>
<th>Non-FDA Approved Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Atenolol</td>
<td>Migraines</td>
</tr>
<tr>
<td>Erythromycin</td>
<td>Gastroparesis</td>
</tr>
<tr>
<td>Albuterol</td>
<td>Hyperkalemia</td>
</tr>
<tr>
<td>TCAs</td>
<td>Neuropathic pain</td>
</tr>
<tr>
<td>Fluoxetine</td>
<td>Premature ejaculation</td>
</tr>
<tr>
<td>Estrogen/testosterone</td>
<td>Gender dysphoria</td>
</tr>
</tbody>
</table>

### When

<table>
<thead>
<tr>
<th>Why</th>
<th>How</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
# Feminizing Treatment Options

<table>
<thead>
<tr>
<th>Agent</th>
<th>17β- estradiol</th>
<th>Administration</th>
<th>Brand Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pre-orchietomy</strong></td>
<td></td>
<td>Transdermal</td>
<td>Vivelle Dot/</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Oral (sublingual)</td>
<td>Climara</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Estrace</td>
</tr>
<tr>
<td><strong>Post-orchietomy</strong></td>
<td></td>
<td></td>
<td>0.05-0.1 mg/24 hrs weekly</td>
</tr>
</tbody>
</table>
Estrogen

- Oral (use sublingual to decrease risk of VTE)
  - Increased risk of blood clots with ethinyl estradiol (OCPs) and conjugated estrogens (Premarin)
  - Preferred is **17-β estradiol (estrace)**
- Transdermal (lowest risk of VTE)
  - Tobacco abuse *OR*
  - Family history of thrombosis *OR*
  - >40 years
### Feminizing Hormones: Anti-Androgens

<table>
<thead>
<tr>
<th>Agent</th>
<th>Spironolactone</th>
</tr>
</thead>
<tbody>
<tr>
<td>Route</td>
<td>Oral</td>
</tr>
<tr>
<td>Brand Name</td>
<td>Aldactone</td>
</tr>
<tr>
<td>Starting Dose</td>
<td>50 mg daily (single or divided)</td>
</tr>
<tr>
<td>Max Dose</td>
<td>200 mg BID</td>
</tr>
<tr>
<td>Post-orchiectomy</td>
<td>--------</td>
</tr>
</tbody>
</table>
Feminizing Therapy Lab Tests

• **Baseline**
  • Lipids, fasting glucose/A1c, AST/ALT, potassium, creatinine

• **3 and 6 months after starting/changing dose**
  • Testosterone, potassium, creatinine, ALT
    • Goal testosterone is low end of normal female range

• **12 months and annually**
  • Testosterone, potassium, creatinine, ALT, lipids, fasting glucose/A1c, **prolactin**
    • Goal testosterone is low end of normal female range
## Feminizing Treatment Effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Expected Onset</th>
<th>Expected Maximum Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Body fat redistribution</td>
<td>3-6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Decreased muscle mass/strength</td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Softening of skin/decreased oiliness</td>
<td>3-6 months</td>
<td>Unknown</td>
</tr>
<tr>
<td>Decreased libido</td>
<td>1-3 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td><strong>Decreased spontaneous erections</strong></td>
<td><strong>1-3 months</strong></td>
<td><strong>3-6 months</strong></td>
</tr>
<tr>
<td>Male sexual dysfunction</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Breast growth</strong></td>
<td><strong>3-6 months</strong></td>
<td><strong>2-3 years</strong></td>
</tr>
<tr>
<td>Decreased testicular volume</td>
<td>3-6 months</td>
<td>2-3 years</td>
</tr>
<tr>
<td>Decreased sperm production</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Thinning and slowed growth of body/facial hair</strong></td>
<td><strong>6-12 months</strong></td>
<td><strong>&gt;3 years</strong></td>
</tr>
<tr>
<td>Male pattern baldness</td>
<td>No regrowth, loss stops 1-3 months</td>
<td>1-2 years</td>
</tr>
</tbody>
</table>

*WPATH Standards of Care, Version 7.*
Feminizing Therapy

- Most effects reversible
- Breast development is permanent
- Impaired fertility may be permanent
- Treatment limitations
  - Voice unaffected
  - Breast growth and development is variable
  - Hormone tx may not alter body hair growth enough
    - Most patients need laser hair removal or electrolysis
# Masculinizing Treatment Options

<table>
<thead>
<tr>
<th></th>
<th>Intramuscular/ Subcutaneous Injection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agent</strong></td>
<td>Tesosterone Cypionate</td>
</tr>
<tr>
<td><strong>Brand Name</strong></td>
<td>Depo-Tesosterone</td>
</tr>
<tr>
<td><strong>Pre-oophorectomy</strong></td>
<td></td>
</tr>
<tr>
<td>Starting Dose</td>
<td>50-100 mg weekly (or 100-200 mg q 2 weeks)</td>
</tr>
<tr>
<td>Max Dose</td>
<td>125 mg weekly (or 250 mg q 2 weeks)</td>
</tr>
</tbody>
</table>

**Post-oophorectomy**

Decrease dose by 3/4
Testosterone - Injections

• May be administered SQ or IM
  • Levels and effects appear to be the same
• 3 ml syringes (with 21 g needles) - for drawing up
• 25 g 5/8" needles - for subcutaneous
• 23 g 1" – 1 ½” needles for IM
Testosterone- Injections

- Start every two weeks if IM
  - Weekly dosing if history of mood disorders, PCOS, obesity, lack of menstrual cycle suppression
- Start weekly if SQ
- Caution increasing too high
  - Excessive testosterone is converted to estrogen

"Testosterone estradiol conversion" by Boghog2 - Own work. Licensed under Public Domain via Wikimedia Commons - http://commons.wikimedia.org/wiki/File:Testosterone_estradiol_conversion.png#/media/File:Testosterone_estradiol_conversion.png
# Masculinizing Therapy - Transdermal

<table>
<thead>
<tr>
<th>Agent</th>
<th>Transdermal Gel</th>
<th>Transdermal Topical Solution</th>
<th>Transdermal Patch</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Brand Name</strong></td>
<td>AndroGel/Testim</td>
<td>Axiron</td>
<td>Androderm (2 or 4 mg/patch)</td>
</tr>
<tr>
<td><strong>Starting Dose</strong></td>
<td>50 mg daily</td>
<td>30 mg (1 pump) to each underarm (60 mg/day)</td>
<td>2-4 mg daily</td>
</tr>
<tr>
<td><strong>Max Dose</strong></td>
<td>100 mg daily</td>
<td>120 mg/day</td>
<td>10 mg daily</td>
</tr>
<tr>
<td>Post-oophorectomy</td>
<td></td>
<td>Decrease dose by ¾</td>
<td></td>
</tr>
</tbody>
</table>
Masculinizing Therapy Lab Tests

• **Baseline**
  • Lipids, CBC, fasting glucose/A1c, ALT

• **3 and 6 months after starting/changing dose**
  • Testosterone, ALT, CBC
    • Goal is normal male range for age

• **12 months and annually**
  • Testosterone, ALT, CBC, lipids, fasting glucose/A1c
    • Goal is normal male range for age
## Testosterone Effects

<table>
<thead>
<tr>
<th>Effect</th>
<th>Expected Onset</th>
<th>Expected Maximum Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin oiliness/acne</td>
<td>1-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td><strong>Facial/body hair growth</strong></td>
<td>3-6 months</td>
<td>3-5 years</td>
</tr>
<tr>
<td><strong>Scalp hair loss</strong></td>
<td>&gt;12 months</td>
<td>Variable</td>
</tr>
<tr>
<td>Increased muscle mass/strength</td>
<td>6-12 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td>Body fat redistribution</td>
<td>3-6 months</td>
<td>2-5 years</td>
</tr>
<tr>
<td><strong>Cessation of menses</strong></td>
<td>2-6 months</td>
<td>n/a</td>
</tr>
<tr>
<td>Clitoral enlargement</td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td>Vaginal atrophy</td>
<td>3-6 months</td>
<td>1-2 years</td>
</tr>
<tr>
<td><strong>Deepened voice</strong></td>
<td>3-12 months</td>
<td>1-2 years</td>
</tr>
</tbody>
</table>

*WPATH Standards of Care, Version 7*
Testosterone Therapy

- Most effects reversible
- Deepening of voice and changes to facial/scalp hair are permanent
- Fertility effects *may* be permanent

http://www.lgbtqnation.com/assets/2013/01/Thomas-Beatie.jpg?c027c9
Take Home Points

• **When**
  - Diagnosis of gender dysphoria
  - Controlled co-morbidities
  - No contraindications
  - Letter from therapist
  - Informed consent

• **Why**
  - Improved outcomes
  - Medically Necessary
  - Address health disparities and discrimination
  - You already have the medical knowledge

• **How**
  - Obtain baseline labs
  - Choose appropriate route of Rx
  - Assess timeline of changes
  - Monitor for side effects
Resources

• Center of Excellence for Transgender Health
  • http://transhealth.ucsf.edu
• WPATH Standards of Care
  • http://www.wpath.org/
• UI LGBTQ Clinic
  • www.uilgbtqclinic.com
• Up To Date
• UI LGBTQ Safe Zone Project
  • http://diversity.uiowa.edu/programs/lgbtq-safe-zone-project