NATIONAL LGBT HEALTH EDUCATION CENTER
A PROGRAM OF THE FENWAY INSTITUTE

Project ECHO®
The National LGBT Health Education Center - Fenway Health
Boston, MA

TRANSECHO

Feminizing hormone therapy

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Gender Affirming Hormones

- Many patients have taken non-prescribed hormones
  - 2013 Ontario survey: 25% had ever used and 6.4% were currently using
  - 2009 NYC study: 23% of transwomen currently using
  - 2007 Virginia Trans Health Initiative Survey: 60% of transwomen and 23% of transmen had ever used
  - 2001 San Francisco Study: 29% of transwomen and 3% of transmen in the past 6 months
  - 2000 Washington, DC Transgender Needs Assessment Study: 58% had used at some time in the past

September 2011 WPATH Standards of Care

- WPATH – World Professional Association for Transgender Health
- The criteria for hormone therapy are as follows:
  - Persistent, well-documented gender dysphoria;
  - Capacity to make a fully informed decision and to consent for treatment;
  - Age of majority in a given country (if younger, follow the Standards of Care outlined in section VI);
  - If significant medical or mental health concerns are present, they must be reasonably well controlled

Feminizing Treatment Options

- Oral Estrogens
  - Estradiol (estrace) 2-8 mg PO or SL daily(can be divided into BID dosing)
- Transdermal Estrogens
  - Estradiol patch 0.1-0.4mg twice weekly, may start lower in patients at risk of side effects. Maximum single dose patch available is 0.1 mg
- Injectable Estrogens
  - Estradiol valerate 5-20mg IM q2 weeks
  - Estradiol cypionate 2-10mg IM weekly
- Antiandrogens
  - Spironolactone (aldactone) 50-400mg PO daily (can be divided into BID dosing)
  - Finasteride (Proscar) 2.5-5mg PO daily

Less Common Treatment Options

- Cyproterone Acetate (not available in US)
- GnRH agonist: Goserelin Acetate
- Flutamide an androgen receptor blocker, associated with severe liver toxicity
- Bicalutamide (Casodex), used in treatment of prostate CA, Less liver toxicity, still with anecdotal reports of severe liver toxicity

Male to Female Treatment Options

- Progestins: ? Benefit on breast development;
- but cardiovascular events and breast cancer in WHI; so how does this translate to trans women?
- also risk of weight gain and depression
  - Depo-Provera 150 mg IM q 3 months
  - Provera 2.5 to 10 mg PO daily*
  - Prometrium 100 mg – 200 mg po daily*
- * Consider dosing 10 days each month cyclically with po form to minimize risk

MTF over 40 yo or at risk of VTE

- Consider adding ASA or other anticoagulant to regimen
- Transdermal estradiol therapy strongly recommended
- Stop smoking!
- When in doubt: hematology consult
  - However: ensure they are gender-affirming

Feminizing Effects of Estrogens & Antiandrogens

Effect	Onset (months)	Maximum (months)
Decreased Libido	1-3	3-6
Decreased Spontaneous Erections		
Breast Growth	3-6	24-36
Decreased Testicular Volume	3-6	24-36
Decreased Sperm Production	Unknown	Unknown
Redistribution of Body Fat	3-6	24-36
Decrease in Muscle Mass	3-6	12-24
Softening of Skin	3-6	Unknown
Decreased Terminal Hair	6-12	>36

NOTE: Possible slowing or cessation of scalp hair loss, but no regrowth
No change in voice

Breast Development

- **Wierckx K, Gooren L, and T'Sjoen G. (2014)Clinical review: Breast development in trans women receiving cross-sex hormones. J Sex Med 2014;11:1240–1247.**
- 11 studies, just under 1000 patients
- Most achieved an A or B cup
- No demonstrable effect of progestin therapy, but no evidence that progestin did NOT help
- No negative effects of progestins
- ?? Advantage to starting spironolactone late or to gradually increasing the dose of estradiol

Risks of Estrogen Therapy

- **Venous thrombosis/ thromboembolism**
- Increased risk of cardiovascular disease
- Weight gain
- Decreased libido
- Hypertriglyceridemia
- Elevated blood pressure
- Decreased glucose tolerance
- Gallbladder disease
- **Benign pituitary prolactinoma**
- Infertility
- Mental health effects
- ? Breast cancer

Risks of Spironolactone Therapy

- Hyperkalemia
- Hypotension
- Renal insufficiency

Drug Interactions

Estradiol, Ethinyl Estradiol, Testosterone levels are DECREASED by:

- Lopinavir
- Rifampin
- Phenytoin
- Carbamazepine
- Progesterone
- Phenobarbital
- Dexamethasone
- Phenylbutazone
- Naphthoflavone
- Benzoflavone
- Sulfamide
- Sulfinpyrazone

Drug Interactions

Estradiol, Ethinyl Estradiol, Testosterone levels are INCREASED by:

- Nefazodone
- Fluvoxamine
- Indinavir
- Sertraline
- Diltiazem
- Cimetidine
- Itraconazole
- Fluconazole
- Clarithromycin
- Grapefruit
- Isoniazid
- Fluoxetine
- Efavirenz
- Paroxetine
- Verapamil
- Astemizole
- Ketoconazole
- Miconazole
- Erythromycin
- Triacetyloleandomycin

Drug Interactions

Estrogen levels are DECREASED by:

- Smoking cigarettes
- Nelfinavir
- Nevirapine
- Ritonavir

Labs for Feminizing Hormones

- Baseline:
  - Renal panel, if on spironolactone
  - Lipids, if indicated clinically
  - Fasting Glucose, if indicated clinically
  - Testosterone level, if suspicion for hypogonadism
  - Prolactin level, if on medication or sx of prolactinoma
  - Liver Enzymes, if suspicion for underlying liver disease

Labs for Feminizing Hormones

- If on spironolactone, serum electrolytes 1 to 6 weeks after start/dosage change, then every 3 months in first year, then yearly
- Lipids, glucose, LFTs only as clinically indicated
- Prolactin level annually for 3 years (and beyond??)
- Hgb/Hct will often drop into the normal female range in women on CSHT

Labs for Feminizing Hormones

- Serum testosterone level (at 6 to 12 months)
  - Should be less than 55 ng/dl

- Serum Estradiol Levels (?)
  - Ideal level is the mean daily level for premenopausal women (may use **200-300** pg/ml as ULN)