



### Desired Pregnancy Case

- 23 y.o. MTF person in because she and her wife would like to become pregnant.
- PMH: Gender dysphoria, on estradiol for the past 3 years, and stopped spironolactone 1 year ago.
- PSH: None

### Case (con't)

- Last labs: T=29, E=182.
- Anything else you would like to know?
  - Banked sperm, desire for biologic children
- What would you recommend?
  - Stop estradiol for 6 months, check labs, work on pregnancy

### Pregnancy Prevention Case

- 27 y.o. trans man comes in for birth control. He has sex with people who produce sperm.
- PMH: Gender dysphoria, on T for the past 5 years. LMP about 4.5 years ago.
- PSH: Chest reconstruction only

### Case (con't)

- What would you want to find out next?
  - Body parts/procedures that contribute to dysphoria. In this case: pelvic exams.
- In light of this information, what BC method would you recommend?
  - NOT IUD or vaginal ring

### Counseling Vs No Counseling

- Differences in brain structure of gender incongruent persons with their natal sex.
  - Brain volume in different parts of the brain in cis women and trans women more closely align (i.e. larger hippocampus, smaller amygdala, thicker cortical area)
  - As do cis men and trans men (i.e. smaller hippocampus, larger amygdala, thinner cortical area).

(de Souza Santos, et al., 2017)

### Counseling Vs No Counseling

- Comparison of Guidelines
  - Endocrinology Society
    - require training in psychiatric diagnosing
    - prefer mental health professional to diagnose for adults
    - required for adolescents
    - mental health professional involvement needed
  - WPATH
    - prefer mental health professional to assist in diagnosis, but indicate that any health care professional with training in transgender care can make the diagnosis
    - psychotherapy not required, but recommended
  - UCSF
    - health care providers can diagnose gender dysphoria, if they feel comfortable, and should be able to assess patient capacity to consent

(Deutsch, 2016, Hembree et al., 2017, WPATH, 2020)

### Mood Disorders

- Therapy is not a requirement for HRT
- Mood disorders must be “reasonably well controlled” prior to HRT treatment

(Deutsch, 2016; Janssen, Busa, & Wernick, 2019; WPATH, 2020)

### Mood Disorders Case

- 34 year old trans man in for HRT after release from ATU for suicide attempt
- 1 week prior to suicide attempt pt started on T cypionate 0.5mL at another location
  - Patient felt that mood became unstable just after injection
- Pt dx with PTSD & bipolar in the ATU
  - Released on Seroquel 600mg and Trazodone 100mg
  - Pt does not want to take these meds

### Mood Disorders Case (con’t)

- What are your next steps?
  - Psychiatry involved, got pt on meds they were willing to take
  - Started testosterone at 0.25mL q2 weeks
  - Lab not in guideline recommendations, but pt was happy with body changes

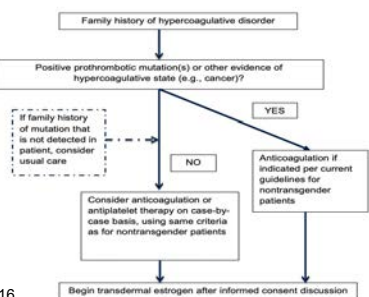
### Clotting Disorders

- Factor V leiden, protein c/s deficiencies, NTHFR
- Risk of clots = to others w/ genetic risk of clotting
- Lifetime anti-clotting meds if clot develops
  - Consider baby aspirin prevention
- Caution with estradiol and testosterone
- Weigh risks and benefits of HRT:
  - Inc risk for clot, HRT inc blood counts, other hypercoagulable states

(Benjamin, Davidian, DeSimone, 2018; Deutsch, 2016; Ornstein & Cushman, 2003)

*Guidelines for the Primary and Gender-Affirming Care of Transgender and Gender Nonbinary People*

Figure 7-2. Approach to management of estrogen in patients with a family history of VTE but no personal history of VTE



Deutsch, 2016

### Addendum to Consent

- For a patient who has a known thrombotic mutation, and wishes to pursue estrogen/testosterone treatment, there is limited information regarding VTE prophylaxis. It is known that the risk of developing a VTE in a patient with a thrombotic mutation such as Factor V Leiden is approximately 5 in 10,000 and this increases with addition of hormones to approximately 35 in 10,000 (Ornstein & Cushman, 2003). University of California, San Francisco, a leading resource on hormone therapy in transgender people, does present an algorithm for treatment of transgender people with a known thrombotic mutation, and this indicates that therapy should follow treatment guidelines of non-transgender people if the patient has not had a previous venous thromboembolism (VTE) (Deutsch, 2016). However, guidelines for pharmacotherapy for known Factor V Leiden mutation, in patients without a previous VTE are unclear with no specific statements about whether or not to anticoagulate patients (Benjamin, Davidian, and DeSimone II, 2018).
- Given the above, a patient with a known thrombotic mutation, wishing to begin estrogen/testosterone therapy for gender dysphoria, is entering into this agreement with the understanding that expert research does not indicate specific guidelines for thromboprophylaxis, and as such, they understand that they are at increased risk for VTE. UCSC can recommend that patients avoid any other risk factors that may increase their risk for VTE (e.g. long car rides, or long airplane rides, smoking, surgical procedures, immobility) however, patients with a known thrombotic mutation must understand that they are at higher risk for VTE if beginning estrogen/testosterone therapy.
- Anticoagulation with low dose aspirin (i.e. 81 mg) is recommended by the providers at UCSC while a patient, with a known thrombotic mutation, is on estrogen/testosterone, and individual discussions must occur between provider and patient if the patient encounters a situation in which their risk for VTE increases (e.g. cancer, extended immobility, surgery, smoking) in order to consider increase in anticoagulation efforts.
- The patient with known thrombotic mutation agrees to take these risks while on estrogen/testosterone therapy, and does not hold UCSC liable for any coagulation difficulty that they encounter while on estrogen/testosterone.

### Bloodwork

- What bloodwork should be drawn with known family history of a clotting disorder?
  - Factor II, V, VII
  - Protein C, S
  - PT/ INR
  - PTT
  - Homocysteine

### Clotting Disorder Cases

- 29 y.o. trans female and 22 y.o. trans man
- Factor V Leiden mutation
- Patient said to mother, “I am more concerned about my dysphoria causing me to commit suicide before I would ever get a blood clot.”

### Clotting Disorder Cases (con't)

- Now what do you do?
  - Weigh risks/benefits
    - Possible suicide attempt without hormones
    - Possible clot
      - Is clot preventable?

### Liver Issues

- Elevated AST/ALT
- Rule out other causes of increase
  - Hepatitis
  - Gallbladder issues
  - Fatty liver
  - Hemochromatosis
  - Autoimmune
  - Medications / alcohol
- Hormones

### Muscular Dystrophy

- Elevated liver labs
- Need to check creatine kinase specifically.
  - High- MD
  - Normal – not MD

### Muscular Dystrophy Case

- 23 Year old trans woman with Becker muscular dystrophy
- Initial labs:
  - AST 39
  - ALT 30
  - Estradiol 35
  - Testosterone 623
- Taking 4mg oral E, 300mg Spiro for 2 yrs

### MD Case (con't)

- AST/ALT gradually rising to highs at 6 mo:
  - AST 72
  - ALT 102
  - Creatinine kinase 622 (44-196U/L normal)
  - Estradiol 83
  - Testosterone 8
- 7 mo
  - AST 72
  - ALT 69
  - Creatinine kinase 1283

### MD Case (con't)

- What do you do?
  - Switched to SL then to injectable E
  - Pt followed up with:
    - Neuromuscular specialist
    - Cardiology
    - Physical therapy
    - Registered dietician (inc. fats in diet R/T new job)

### Hyperprolactinemia

- Elevated prolactin level at baseline
- Rule out:
  - pituitary tumor, breast stimulation, hypothyroidism
- Labs to verify pituitary
  - 2<sup>nd</sup> prolactin
  - Adrenocorticotrophic hormone (ACTH)

### Hyperprolactinemia

- Meds that cause
  - Hormones, esp. estradiol, antiandrogens
  - Psych:
    - SSRIs
    - Atypical antipsychotics (risperidone)
    - 1<sup>st</sup> gen antipsychotics (haloperidol)
  - Anti HTN: methyldopa, verapamil
  - Dopamine receptor antagonist (metoclopramide, risperidone)

(Snyder, 2019)

### Hyperprolactinemia Case

- 59y.o high functioning autistic transwoman w/ pre-HRT TSH 9.5, no baseline prolactin.
- Prolactin after 1 year HRT: 20.3
  - Normals: men 2-18ng/mL, women 2-29ng/mL
- ACTH normal at 13
- Repeat prolactin 13.5

### Panhypopituitarism

- Decreased pituitary hormones
  - Prolactin, GH, ACTH, TSH, FSH, LH
- Symptoms are a combination of deficiency of each hormone

### Panhypopituitarism Case

- 27 year old trans man diagnosed with panhypopituitarism at age 11
- Testosterone unreadable
- Estradiol <2
- On Synthroid 77mcg, GNRH daily injections, Prednisone 5mg daily

### Panhypopituitarism Case (con't)

- How do you manage HRT?
  - No research on trans people with hypopituitarism, so consult Endocrinology
  - When someone has lived with negligible hormones, what should HRT hormone level goals be?
  - Consult yielded low start with T, with stability for patient dysphoria at 0.25mL every 2 weeks, and T 152-200.

### Metabolic Changes

- OK to evaluate before starting HRT
- How committed are patients
  - Are they willing to make life changes to improve overall health?
- Increased BMI hormone requirements
  - Lower estrogen in MTF
  - Increased testosterone in FTM

(Fernandez et al., 2019)

### Metabolic Changes

- Would like to avoid making obesity worse with start of hormones
  - Fat metabolism of hormones
  - FTM overweight and obesity prevalence increased from 23% to 35% after starting hormones

(Vilas, Rubalcava, Becerra, & Para, 2014)

### Metabolic Changes

- Cardiovascular risks in morbidly obese
  - Increased CVD risk:
    - Estrogen: >37.9 or <12.9
    - Testosterone: >700 or <150
- Higher CVD risk in transwomen who retained testes than those who had a bilateral orchiectomy.

(deSouza Santos et al., 2017)

### Morbid Obesity Case

- 32 y.o. transman on 3 lpm continuous O2, smokes, 510 lbs, desires HRT
- No prior investigation completed on why patient is hypoxemic
- Patient is noncompliant with CPAP
- Cardiology confirmed obesity hypoventilation syndrome



## Morbid Obesity Case (con't)

- What are your next steps for this patient?
  - Find out what they know about hormones and obesity
  - Find out if they see their obesity as a problem
  - Find out how significant their gender dysphoria is
  - Weigh risks and benefits of HRT
  - Help with weight loss efforts

## Testosterone Boosters

- Be on the lookout for these
  - Fat burners, Increase energy, Sexual health
  - GNC: Men's Healthy Testosterone
- Herbs
  - Asian /Siberian Ginseng
  - D-Aspartic acid
  - Fenugreek
  - DHEA
  - Ashwaganda

Memorial Sloan-Kettering, 2015

## Pre-Op Considerations

- People should be in physiological hormone range
  - Don't make cisgender people deplete sex hormones
- Surgeons who insist.
  - Advocate for your patient by teaching the surgeon
  - Consider sending research to surgeon with the current recommendations

(Boskey, Taghnia, Ganor, 2019)

## Pre-Op Considerations

- FTM/cisM: T NOT associated with inc. thrombi
  - Don't stop testosterone
- MTF:
  - Studies done on oral BCP variety of estrogen (ethinyl estradiol) found conflicting results in cisgender women
  - Clotting evidence lower with estradiols used for MTF
  - Clotting evidence lower with non-oral estradiols
  - Current question is if estradiol in trans women increases risk greater than the surgery
  - Balance risk/benefit

(Boskey, Taghnia, Ganor, 2019)

## Questions



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