HIRSUTISM, HYPERANDROGENISM PHARMACOTHERAPY

• Farshad Hashemian BCPS.
Terminology:

- Hirsutism
- Hypertrichosis
- CAH
- PCOS
- Vellus hair
- Terminal hair
- SHBG
- DHT
- DHEA
Terminology:

- Hirsutism
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• Hirsutism is a symptom rather than a disease
• 1 in each 10 women.
• Puberty ........ Menopause.
Hair Cycle

- Anagen
- Catagen
- Telogen
Drug Induced Hypertrichosis

**Generalized:**

- Minoxidil
- Diazoxide
- Phenytoin
- Cyclosporine
- PUVA
- Topical Steroides
- Streptomycin
- Acetazolamide
- Fenoterol
- Penicillamine

**Localized:**

- Interferon
- Sodium tetradeyl sulfate
- Topical Irritant
Androgens

- Testosterone
- DHEA (DHEAS)

DHT: TYPE I
TYPE II
METABOLITE: 3-α androstanediol glucuronide
(Idiopathic Hirsutism)
Testosterone is transported:

Normal women

19% Albumin

80% SHBG

Hirsute women

19% Albumin

79% SHBG

1% Free

2% Free
Insulin resistance

Hyperinsulinemia

Genetic defects of insulin receptor
Defects of tyrosine kinase
Autoantibodies to insulin receptor

Ovarian insulin receptors
LH/FSH

SHBG
Free Testosterone

PCOS
Hyperandrogenism

Hyperinsulinemia

IGFBP-1
IGF1

Hyperthecosis
Diagnosis

• **History**
  (onset, progression, menses, race, family history, pregnancy, galactorrhea, drug history, …)

• **Lab Tests**
  (Testosterone, DHEA, DHEAS, TFT, Prolactin, …)
Treatment

- Pharmacotherapy
- Non-pharmacotherapy

NOTE: Weight loss is so important!
Pharmacotherapy

- OCPs:
  - Mini-pill
  - Desogestrel
  - Norgestimate
  - Gestodene
  - **Cyproterone acetate**
Spironolactone

6 month 100 mg/day 67% improvement

Hyperkalemia

Irregular menstruation bleeding
Finasteride

- 5 mg, 1 mg

flutamide

- 125-250 mg
In Pregnancy ALL are in: Group X!
The Others!

- Corticosteroides
- Cimetidine
- Ketoconazole
- GnRH analogue
- Eflornithine HCl
- GI198745
- Serena repens (Saw-Palmetto Plus)
Non-Pharmacotherapy

- **Shaving**
- **Epilation?**
- **Depilatory** *(thioglycolates NaOH+Ca(OH)_{2})*
- **Radiation**
- **Lasers**
- **Photodynamic** *(Aminolevulinic acid 20% + argon laser)*…50-90% regrowth at 3 mo.
- **Electrolysis**: galvanic, thermolysis
- …
Have a good time!