

Dr. Robins Informal Teaching

Week 2 - Contraception

Types

- Hormonal
 - Oral
 - Ring
 - Patch
- Intrauterine devices
 - Levonorgestrel
 - Mirena
 - Jaydess
 - Copper
 - Flexi T
 - 300
 - 380

History of Oral Contraception

- Katherine McCormick 1950
- Margaret Sanger
- Gregory Pincus
- Min Chang
- John Rock
- First O/C 1958-1960
 - 10 mg norethynodrel
 - Contaminated with 150 mcg mestranol

Content of Oral Contraceptive Pills

- Estradiol
- Progestin

How Does the Pill Work?

1. Suppression of ovulation by progestin effect on the gonadotropic hormone releasing centre in the hypothalamus (frequency of release)

How Does the Pill Work? (cont.)

2. Increasing cervical mucous viscosity.
3. Suppressing endometrial growth (atrophy).
4. Changing tubal ciliary activity.

Estradiol

- Pills vary in estradiol content
 - Ranges from 10 mcg to 35 mcg

Prescribing

The general principle in prescribing medication is to prescribe the lowest dose possible to produce the effect you desire with the least side effects and risk.

Hence the first start pill should be the 10 mcg one.

Progestins

There are 3 types in the pills used today:

1. 19-nortestosterone
2. 17-hydroxyprogesterone
3. Spironolactone analog

19-nortestosterone

- Estranes
- Gonanes
- Constitute the majority
- Examples:
 - Estranes
 - Norethindrone
 - Gonanes
 - Levonorgestrel
 - Norgestimate
 - Desogestrel

17-hydroxyprogesterone

- Depo-Provera (medroxyprogesterone)
- Cyproterone
 - Diane-35

Spironolactone analog

- Drospirenone
 - (Yaz, Yasmin)

Progestins

- Progestins are evaluated on 3 principles:
 1. Bioavailability
 2. $\frac{1}{2}$ life
 3. Progesterone receptor affinity

Prescribing Principle

1. When to start in the cycle
2. How to take:
 1. 21 days on, 7 days off
 2. 63 days on, 4 days off
 3. Continuous

Prescribing Principle (cont.)

Only 1 rule:

- Cannot be on pills less than 21 days or off longer than 7

Side Effects

- Unintended bleeding
- Weight gain
- Nausea
- Breast tenderness
- Libido?

Absolute Contraindications

1. DVT/Pulmonary embolism
 - Factor VII levels increase
 - Antithrombin III levels fall within 10 days of starting O/C

Absolute Contraindications (cont.)

Thrombophilia

1. Factor V Leiden
2. Antithrombin III deficiency
3. Protein S, Protein C deficiency
4. Genetic mutation Fibrinogen, Prothrombin

Absolute Contraindications (cont.)

1. Smoking >20 cigarettes/day and over age 35
2. Ischemic heart disease
3. Stroke
4. Migraines with aura
5. Chronic vascular disease - chronic diabetes
6. Breast cancer – estrogen receptor positive

Absolute Contraindications (cont.)

1. Pregnancy < 6 weeks
 - Relative up to 6 months
2. Liver disease
 - Active hepatitis
 - Chronic hepatitis
 - Cirrhosis
 - Hepatoma
3. BP > 160/100
4. Atrial fibrillation
5. Subacute bacterial endocarditis
6. Pulmonary embolism

Interaction with Other Medication

1. Antiepileptics
 - Dilantin
 - Phenobarbital
2. Rifampin
3. Griseofulvin

Non-Contraceptive Benefits

1. Reduction in ovarian cancer up to 40%
 - Effect may start as early as 3-6 months
2. Reduction in endometrial carcinoma 50%
 - Lasts up to 15 years

Non-Contraceptive Benefits (cont.)

1. Reduction in acne
 - All O/C's reduced
 - Diane-35 for moderate to severe
 - Yaz and Yasmin for mild to moderate

Non-Contraceptive Benefits (cont.)

1. Reduction in:
 - Menses
 - Dysmenorrhea

Contraceptive Ring

Contraceptive Patch

Depo-Provera

Continuous Progestin Pill

- Norethindrone acetate

Emergency Contraception

- Levonorgestrel
 - 1.5 mg single dose
- Ulipristal
 - 30 mg
 - Antiprogestin
- Mifepristone
 - 10 mg

Intrauterine Devices

- Levonorgestrel releasing
 - Mirena
 - Jaydess
- Copper
 - Flexi T

Rules for Insertion