HORMONAL CONTRACEPTION

- FUTURE

ORAL CONTRACEPTIVES

- Features
  - Low failure rate
  - Low incidence of side effects
  - Serious complications are rare
  - Simple to initiate and discontinue
  - Few absolute contraindications
  - Numerous non-contraceptive uses/benefits
  - Reduction in healthcare costs

Oral Contraceptives

- Despite their well established efficacy & safety, many patients prematurely discontinue OCs, many of whom do so due to side effects

NEW REGIMENS TO MANAGE SIDE EFFECTS AND IMPROVE COMPLIANCE

The Standard 28 Day Regime

- Until recently, all formulations were a 28 day cycle
  - 21 active / 7 hormone free
- Rationale
  - To mimic the natural menstrual cycle by inducing monthly withdrawal bleeding
  - Low incidence of breakthrough bleeding
- Drawback
  - Monthly withdrawal symptoms

Hormone Withdrawal Symptoms In Oral Contraceptive Users

- Headaches
- Pelvic Pain
- Bloating and Swelling
- Breast Tenderness

Reasons To Modify The Standard 21/7 OC Regime

- Common estrogen withdrawal symptoms during the hormone free interval
- Medical disorders:
  - Anemia, endometriosis,seizures, etc.
- Convenience/Forgetability

Changing The Standard OC Regime: Current/Future Ideas

- Shorten the hormone free interval from 7 days to 3-5 days to provide greater ovarian suppression and decrease the incidence/severity of hormone withdrawal symptoms
- Extend the no. of days of active OC's to greater than 21 days
- Add estrogen during the hormone free interval

Extended OC Regime

- If initiating OCs, begin with the standard regimen for 2 months because of high incidence of BTB/BTS and other side effects
- Have patient return during the 3rd cycle to assess compliance/side effects
- If patient having withdrawal symptoms during the hormone free interval or wants to delay menses, discuss extending the active pills
- Instruct to extend pills till BTB/BTS occurs, take a 4 to 7 day hormone free interval, and restart (re-label pack to correct day of week if necessary)

Extended OC Regime

- Warn the patient that she can go off the “real” pill for less than 7 days but never more than 7 days!!
- Make sure your patient understands and is comfortable with this extended regimen; if not, use standard regimen
- Increases counseling time in the office; your patient must understand how to extend
- Side effects?? - no extensive data; studies underway

Extended OC Regime

- Increased OC cost because more active weeks per year and potentially more trips to the pharmacy (prescribe 3 months at a time)
- But, less tampons/pads/analgesics/ migraine medications, etc.

Extended OC Regime

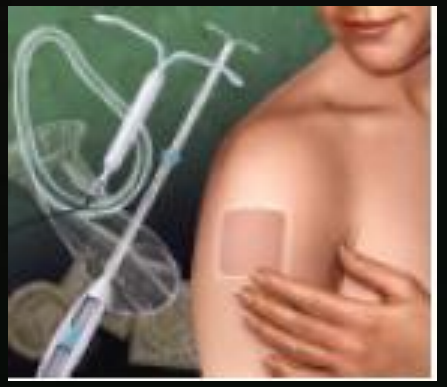
- Increased lifetime steroid use, but no theoretical reason to anticipate increased complications (i.e. DVT, MI, stroke, etc.); no extensive data
- No reported increase in complications though extended regimes used for decades in patients with endometriosis
- Available formulations:
  - Seasonale – for 84 days of continuous use
  - Lybrel - for 365 days of continuous use

What can you do if a patient can't or doesn't want to extend, but has estrogen withdrawal symptoms during the hormone free interval?

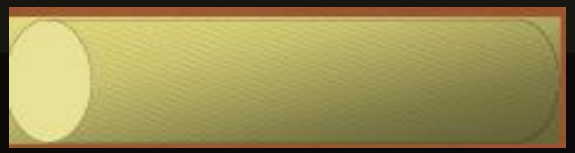
- ? Add Estrogen ?

Newer Strategies

- Subcutaneous route
  - Formulated as
    - “Rods”- Polymer matrix mixed with hormones
    - “Capsules “ – hollow polymer tube filled with hormone
- Transdermal route – Patch, spray or gel
- Vaginal rings & IUCDs



Subcutaneous Route
(e.g. Implanon)



- Progestin-only contraceptive
- Releases 40 mcg etonogestrel/day
- Effective for three years
- Pregnancy rate zero in 70,000 cycles , including wts>90kg
- Mechanism of action: Inhibition of ovulation, Increased viscosity of cervical mucus
- Insertion/Removal less difficult
- Side effects: Irregular bleeding (amenorrhea reported in 40.6% patients)

Transdermal Route (e.g. Ortho Evra)

- Delivers 20 mcg of ethinyl estradiol and 150 mcg of norelgestromin daily
- Takes 3 days to achieve a steady state of hormone in the blood stream
- Estrogen exposure comparable to a 30 mcg OCP
- Patch is replaced once per week for 3 consecutive weeks
- Worn on abdomen, buttocks, upper outer arm, or upper torso
- Do not place on the breast

Transdermal Route (e.g. Ortho Evra)

- Advantages:
  - Only has to be replaced once per week
  - May be taken continuously
- Disadvantages:
  - May slip off- provide pt. with an emergency patch
  - Patch may be less effective in women who are > 198 pounds

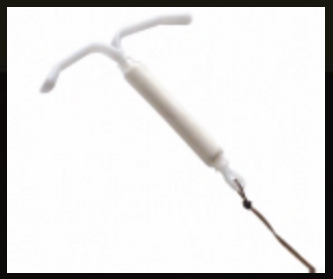
Vaginal Contraceptive Ring
(e.g. NuvaRing)

- Combined hormonal contraception consisting of a 5.4 cm diameter flexible ring
- 15 mcg ethinyl estradiol and 120 mcg of desogestrel
- Mechanism: suppresses ovulation
- Typical use failure rate: 8%
- Not reported to cause vaginal infections or Pap changes
- Efficacy not affected by tampons

Vaginal Contraceptive Ring
(e.g. NuvaRing)

- Placed in vagina and removed after 3 weeks
- Allow withdrawal bleeding and replace new ring
- Steady low release state
- Advantage is patient only has to remember to insert and remove the ring 1x/ month
- May be placed anywhere in the vagina

Hormonal IUCDs (e.g. Mirena)



- Contains 52mg levonorgestrel in a T-shaped intrauterine system
- To be inserted into the uterine cavity within 7 days of the onset of menstruation
- Replaced after 5 years
- Delay postpartum use until 6-weeks after delivery
- Side effects include bleeding disturbances, headache, lower abdominal pain, back pain etc
- Suited as a contraceptive for patients with other menstrual disorders e.g. endometriosis, menorrhagia

Newer Strategies

MALE HORMONAL CONTRACEPTION – UNDER INVESTIGATION

- Levonorgestrel implant with testosterone injection
- Levonorgestrel 125 mcg daily with testosterone patches
- Levonorgestrel 500 mcg daily with TE 100 mg injection weekly
- Desogestrel 300 mcg with Testosterone pellets
- Testosterone 500 mg/ 1000 mg with levonorgestrel implants
- Norethisterone 200 mg with testosterone 1000 mg

Conclusions

- Several newer approaches under development
- Their long-term safety data not completely studied
- They offer alternative mode for contraception in women experiencing either compliance problems or side effects