# Contraception update

Gina M. Brown, M.D.

- IUDs cannot be used in HIV + women
- Women with thromboembolic disease can never use hormonal contraception
- Combined hormonal contraception increases blood pressure
- Anti-seizure medication decreases the effectiveness of combined hormonal contraception
- Women on HAART need a back up method with Hormonal contraception to prevent pregnancy

- IUDs cannot be used in HIV + women
- Women with thromboembolic disease can never use hormonal contraception
- Combined hormonal contraception increases blood pressure
- Anti-seizure medication decreases the effectiveness of combined hormonal contraception
- Women on HAART need a back up method with Hormonal contraception to prevent pregnancy

- OCs must be discontinued before surgery
- Tetracycline decreases the effectiveness of combined hormonal contraceptives
- Teens should not use DMPA (depoprovera)
- DMPA should not be used for longer than 2 years in a row
- The hormonal contraceptive patch has a greater risk of thromboembolism than oral contraceptives


- OCs must be discontinued before surgery
- Tetracycline decreases the effectiveness of combined hormonal contraceptives
- Teens should not use DMPA (depoprovera)
- DMPA should not be used for longer than 2 years in a row
- The hormonal contraceptive patch has a greater risk of thromboembolism than oral contraceptives


ML is a 36 year old black female with newly diagnosed HIV. She is interested in having one more child but wants to wait one year. You are her family planning provider. What should be your considerations?

ML is a 36 year old black female with newly diagnosed HIV. She is interested in having one more child but wants to wait one year. You are her family planning provider. What should be your considerations?

- Age
- Immune status
- Need for HIV medication
- Partner's status
- Safe conception
- Social supports
- Other health status
- Adherence issues
- Other

## Using Contraceptives

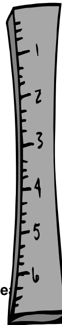
- Consciously decide to be sexually active
- Recognize pregnancy possibility
- Plan to prevent pregnancy
- Obtain the method
- Negotiate with partner
- Continue to use the method
- Use the method properly and regularly

## Available Contraception Methods

- Hormonal oral
- Hormonal injectable
- Hormonal subcutaneous
- Emergency contraception
- IUD
- Barrier
- Surgical
  - Tubal ligation
  - Vasectomy

## Ranking of Currently Available Contraceptive Options*

Lowest Failure Rate




- Vasectomy
- Implant
- Tubal Sterilization
- Combination Injectable
- Progestin Injectable
- IUD
- Oral Contraceptives
- Male Condom
- Diaphragm
- Cervical Cap
- Spermicide
- Coitus Interruptus
- Natural Family Planning
- Female Condom

Highest Failure Rate

*Based on typical first-year failure rates

## Risks Contraception

- Combined hormonal
  - Thromboembolism
    - 3- 4X risk
- Depoprovera
  - Decreased ovarian estrogen production
  - Osteoporosis
    - Reversible
    - 1 yr - decr. 1.5 %
    - 2yr – decr 3.1 %
    - 3yr- lumbar spine
    - 15 yr osteopenia
- IUD
  - Infection at insertion

## Hormonal Contraception

- CHCs inhibit ovulation
  - E and P suppress LH
  - E suppresses FSH
- Progestin only
  - Thickens cervical mucous
  - Inhibits ovulation (not always)
  - Thinning endometrium
  - Prevents endometrial implantation

## Warning signs for CHCs

A  Abdominal pain
C  Chest pain
H  Head aches
E  Eye problems
S  Severe leg pain

Mood swings, Depression, Jaundice, Signs of pregnancy

## Other CHC delivery systems

| | Patch | Ring |
|---|---|---|
| Hormones | Ethinyl Estradiol 20ug<br>Norelgestromin 150ug | Ethinyl Estradiol 15ug<br>Etonogestrel 120ug |
| Efficacy | = CHC<br>< 90 kg | = CHC |
| Side effects | Same as CHCs | Same as COCs |
| Adherence | > CHCs | > CHCs |

## Patch Safety Issues

- Exposes patient to 60% more EE than COCs
  - Interpreted as greater risk of thromboembolism
- Peak EE levels 25% less than CHCs
  - CHCs have peak and nadir
  - Patch has consistent level while in place
- Preliminary studies suggest increased thromboembolism risk
- Trial comparing E+P in Patch to same E+P in CHC shows no difference Contraception 73(2006) 223-228
- Cochrane collaborative review shows no difference 2006
- FDA supports no change in current clinical practice

## How Some Contraceptives May Increase HIV Risk

- Combined Hormonal
  - Increase cervical ectopy
- Progestin only
  - Vaginal epithelial thinning
  - Decrease vaginal acidity
- N-9
  - Cervical, vaginal, anal irritation
  - Cervical, vaginal, anal epithelial sloughing
- NO thought pregnancy risk -> NO thought HIV risk

## Diaphragm and Cervical cap to prevent HIV

- Theoretical protection
  - Covers cervix---Where HIV infects most easily
- Practical concerns
  - Does not cover vagina
  - Concommitant spermicide use may ⬆ risk
  - Removal exposes cervix to semen (where HIV resides)

## Spermicides

- Gel, foam, cream, suppository, or tablet
- For ideal use:
  - timing and location of placement in vagina
  - allowance of ample time for agents to dissolve
  - use with each coitus
- Efficacy: failure rates of 5% - 50%
- Bacterial STD transmission decreased by 25%
- Increased HIV risk in some circumstances

## Barriers and STI Prevention

- Works for some
  - GC
  - Chlamydia
  - Bacterial Vaginosis/ Trichomonas
  - Hepatitis?
- Not full protection
  - HSV
  - HPV
  - Syphilis (chancre, palm and sole lesions)

## Barriers and HIV Prevention

- Protective
  - Condoms alone
- Not protective
  - Diaphragm/Cervical cap
  - Spermicide
  - Condom plus spermicide
  - Diaphragm/Cap plus spermicide
- ➢ Spermicide use may increase risk

## Medication interactions and hormonal contraception

## Antibiotics and hormonal contraception

- Decrease steroid levels with CHCs
  - Rifampin
  - Griseofulvin

## Contraceptive/Antiretroviral Drug Interaction

| Antiretroviral | ↑ Estradiol | ↑Norethindrone |
|---|---|---|
| Indinavir (Crixivan) | 24% | 26% |
| Amprenavir & Fosamprenavir | ↓Amprenavir 20% | ↓Amprenavir 20% |
| Atazanavir | 48% | 110% |
| Delavirdine | * | |
| Efavirenz (Sustiva) | 37% | |

USPHS 2005

## Contraceptive/Antiretroviral Drug Interactions

| Antiretroviral | ↓ Estradiol | ↓Norethindrone |
|---|---|---|
| Nelfinavir | 47% | 18% |
| Lopinavir | 42% | |
| Nevirapine | 20% | |
| Kaletra (Lop/RTV) | 42% | |
| TPV/RTV | 50% | |

USPHS 2005

## Other HIV Medication Concerns

- Current first and second line treatment regimens contain medications not recommended for use in pregnancy
  - EFV, APV, ATV, TPV
- Efavirenz (Sustiva, EFV) is teratogenic
- d4t + ddI markedly increased risk lactic acidosis in pregnancy
- Most women don't realize they are pregnant until (at least) 6-8 weeks gestation

USPHS 2005

## What do Providers Need to Know?

- What antiretroviral is used
  - No hormonal contraception with Amprenavir
  - Alternate/additional contraception
    - Nelfinavir, Ritonavir, Lopinavir, Nevirapine, Kaletra, TPV/RTV
  - No Efavirenz (Sustiva) if no effective contraception
  - Lowest effective hormonal dose with Atazanavir
  - Limited data on Kaletra (Lop/RTV), in pregnancy
    - Amprenavir, Atazanavir, Tipranavir

## Providing Contraception

- What does a provider need to do before providing Contraception?

A- Physical exam
B- Blood pressure
C- Pap smear
D- STI screen
E- Complete history

## Providing Contraception

- What does a provider need to do before providing hormonal contraception?
  - A- Physical exam
  - B- Blood pressure
  - C- Pap smear
  - D- STI screen
  - E- Complete history

JAMA May 2, 2001-285 (17)

## Evaluation of Bone Mineral Density Recovery Following Discontinuation of DMPA-IM Contraception

Andrew M. Kaunitz, MD[1]
Simon Kipersztok, MD[2]

Presented at ACOG ACM, May 10, 2005, San Francisco, CA

[1]Department of OB/GYN, University of Florida Health Science Center, Jacksonville, Fla; [2]Department of OB/GYN, University of Florida, Gainesville, Fla

## Study Objectives

- Compare BMD in adult women using
  - DMPA-IM 150 every 12 weeks, or
  - Nonhormonal contraception
- Study mandated by FDA at time of DMPA approval for contraception (1992)

BMD = bone mineral density.

## Depo FDA study: design

- Prospective 7 year study
- BMD lumbar spine and hip
- Depo for up to 240 weeks (4.6 years)
- Follow-up: up to 96 wks (1.8 years)
- Groups matched for race and current smoking status

## Results: Long-Term Use in Adult Women (N=538)

- 4.6 Years on treatment
  - Decreases in BMD occurred in DMPA users
- 1.8 Years post-treatment
  - Recovery of BMD took place in DMPA users

Kaunitz AM et al. Abstract. ACOG; 2005; San Francisco, Calif.

## What does that mean for DMPA use and HIV?

- HIV causes bone demineralization
- No HIV / DMPA data
- Consider conservative use?
  - Limited to two years in a row duration as per FDA
- Reconsider teen use?

## Cervical Disease

## What are the risks?

- **Young age of sexual debut**
- **Number of partners**
- **STI**
- **? Hormonal contraception**
- **Smoking**
- **HIV**

## How often a Pap smear?

**A Pap is not a pelvic exam!**

- **Yearly**
  - **Once 2-3 negative in a row, then q 2-3 years**
  - **Special caveats**
    - **HIV**
      - **Every 6 mos until negative X 2 then yearly**
      - **New partner/ new STI?**
        - **Consider increased frequency**

## Who gets Colposcopy?

- Any abnormality with HIV
- ASCUS/ ASC-H (cannot rule out High Grade SIL)
- Persistent abnormalities
- Low grade disease or ASCUS with high risk HPV serotypes
- High grade disease (CIN 2,3, CIS)
- ASCUS with High risk HPV

## Who gets a biopsy?

- Any visible lesion
- Colposcopically visible lesions

## How else can we screen?

- Cytology
  - Sensitivity – 63%
  - Specificity – 94%
- HPV DNA
  - Sensitivity – 88%
  - Specificity – 93%
- Visual inspection with acetic acid
  - Sensitivity – 76%
  - Specificity – 81%

## What are the limitations

- Cytology
  - Technician, artifact, inflammation vs abnormality
- HPV
  - Only for some HPV High risk types
  - ? Utility with HIV
- Visual inspection
  - Developed expertise

## Pap vs HPV

- Pap
  - Inexpensive
  - High specificity
  - Technology is person dependent
  - Minimal preparation
- HPV
  - Higher sensitivity for particular serotypes
  - Costly
  - Variable expression of serotypes means some can be missed
  - May be useful in places without Pap smear
  - Technology is machine dependent

## What about thin prep?

- Higher rate of positive
- More false positives
- Does not change outcome
- ? May increase cost
- Allows concomitant HPV detection

## HPV detection

- Detects HPV types
  - 6/11 (benign)
  - 16/18 (cancer causing of 75%)
- Does not detect
  - All other HPV types that cause cancer
  - All other benign HPV types
  - Misses 25% of possible cancer risks

## HPV Vaccine

- Useful *prior* to HPV exposure
  - Most effective in younger age (10-14 years)
  - Prevents HPV 6/11, 16/18 (75% HPV disease)
  - Does not prevent other cancer related and benign serotypes (accounts for 25% of HPV disease)

## Take Home

- You must know updated and correct info on Contraception
  - Efficacy, risks, benefits, other uses
- You must know what meds HIV + patients are taking
  - Interactions with contraceptives
  - Side effects
- You should actively work with the HIV care provider
  - Medication changes– HAART or contraception
- HPV testing and vaccine are helpful but not a panacea
- Pap ≠ Pelvic