Contraception and the Internist: A Hands-On Approach

SGIM Workshop

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Unintended pregnancy

- Half of all pregnancies in the U.S. are unintended.
- Nearly half of all women will have at least one elective termination of pregnancy in their lifetime.
- A majority of unintended pregnancies occur among women who reported using contraception during the month of conception.

Henshaw SK, Family Planning Perspectives, 1998
What is our role in preventing unintended pregnancies?

Internists can help women choose the contraceptive method that they are most likely to use consistently and correctly

- Lifestyle
- Preferences of patient and partner
- Medical needs
Contraceptive Options in 2005

- **Combined hormonal formulations**
  - Combination oral contraceptive pills
  - Contraceptive vaginal ring
  - Transdermal contraceptive

- **Progestin-only formulations**
  - Oral contraceptives
  - Injectable contraceptive

- **Intrauterine contraception**
  - Levonorgestrel IUS
  - Copper IUD

- **Barrier methods**
  - Female and male condom
  - Diaphragm
  - Cervical cap
  - Sponge
Goals for this session

- To review the advantages and disadvantages of current contraceptive methods in a variety of patients
- To introduce some of the newer methods of contraception
- To provide hands-on training in the use of current contraceptive methods
Intrauterine Contraception Devices Available in the United States

- **Copper T 380A IUD**
  - Copper ions
  - Approved for 10 years use
  - Approved 1988

- **LNG IUS**
  - 20 μg levonorgestrel/day
  - Approved for 5 years use
  - Approved 2000
The Trouble with IUD’s…

- Is that only family planning people favor them?
- Is NOT that:
  - They cause infection
  - They cause infertility
  - They cause abortion
  - Patients don’t want them
Why do we like IUD’s?

- Most effective available method
- Safer than the next most effective method
- Second-most long acting method
- Requires attention at infrequent intervals
- Rapidly reversible method
Why IUC is Underutilized in U.S.

- Dearth of trained and willing professionals to insert devices
- Negative publicity about method in early ’70s continues
- Misconceptions by health care providers and the public
- Fear of litigation

Intrauterine Contraception

Contraindications

Absolute Contraindications:
- pregnancy
- current, recent, or at risk for pelvic infection
- anatomy that would not permit insertion
- suspicion/diagnosis of uterine or cervical CA
- immunocompromised condition
- Wilson’s disease (for copper-containing IUDs)
Myth: IUD Prevents Implantation

- Most evidence now suggests that all IUDs induce a foreign body reaction that is spermicidal, preventing fertilization.
- Today’s intrauterine contraceptives have other mechanisms of action that prevent fertilization.

Myth: IUDs Cause Pelvic Infection

Current evidence confirms that risk of infection relates to insertion not IUDs

No increased risk of PID with IUD use

Sivin et al. Contraception 1990;42:361
Andersson et al. Contraception 1994;49:56
Intrauterine Contraception and Pelvic Inflammatory Disease

WHO international study of 22,908 IUD insertions:

- Overall rate of PID 1.6/1000 w-y
- Highest risk in first 3 weeks:
  - 9.66/1000 w-y
Myth: IUDs and tubal infertility

Daling et al, NEJM 1985 and 1992
Case control population study
IUD use associated with 3.7 OR of later tubal infertility
Effect mainly seen with Dalcon Shield
Insufficient numbers to determine risk with any other IUD type
Myth: IUDs and tubal infertility

- More recent studies have refuted this association.
- Current IUD’s not associated with an increased risk of tubal infertility.
- Infection, not IUD use is associated with tubal infertility.

NEJM 345(8):561, 2001
IUD Counseling

- Efficacy
- Return to fertility
- Side effects
- Changes in bleeding patterns
- Health benefits
- Safety
- Insertion and follow-up
IUD Counseling: Efficacy

- High efficacy
  - In clinical studies failure rate similar to sterilization
- Continuous contraception
  - LNG IUS: 5 years
  - Copper IUD: 10 years
Differences between IUDs

- Mechanism of action
- Active components
- Bleeding patterns
- Insertion technique
- Insertion time
- Length of use
IUD Pre-placement Procedure

- Pelvic examination to determine
  - size, position and mobility of uterus
- Cleanse cervix with an antiseptic solution
- Place tenaculum on the cervix
- Sound the uterus to measure
  - depth and direction of endometrial cavity
  - note depth of uterus for medical record
Contents of the Sterile Pouch

- Solid stabilizing rod
- Insertion tube with movable flange to guide
  - depth of placement
  - plane for Copper T arm extension
DO NOT remove ParaGard from the insertion tube prior to placement in the uterus.

- Fold arms down
- Pull the solid rod partially
- Place bend horizontal arms downward
- Push insertion tube against arms of ParaGard
Loading the Arms

- Use other hand to maneuver the insertion tube to pick up the arms of ParaGard.
- Insert no further than necessary to ensure retention of the arms.
Placing the Solid Rod

Introduce the solid rod into the insertion tube from the bottom alongside the threads until it touches the bottom of ParaGard.
Introducing the Loaded Unit

- Adjust the movable flange to correct depth
  - the horizontal arms and the long axis of the flange are in the same horizontal plane
- Introduce the device until ParaGard is in contact with the fundus
  - movable flange should be at cervix
  - *do not force insertion*
Release of the Copper T 380A

- Withdraw the insertion tube 1 cm
- The solid rod is held stationary
  - this will release the arms of ParaGard
Final Placement

The insertion tube is moved upward, until the fundus is felt
Withdrawing the Rod and Insertion Tube

- Withdraw the solid rod first while holding the insertion tube stationary
- Withdraw the insertion tube from cervix
Cutting the Threads

Cut threads to 2-3 cm from external os

- Record the length
- Encourage patient to check length
LNG IUS: Insertion

Completely different insertion technique
LNG IUS: The Inserter

Components:
- Shaft (handle)
- Insertion tube (outer tube) with scale
- Plunger (inner tube)
- Slider (attached to outer tube)
- Flange
Step 1: Opening the Package

- Open sterile package
- Release threads
- Make sure slider is in most forward position away from you
- Check that arms of system are horizontal
Step 2: Preparation

- Hold slider steady
- Pull on both threads to draw system into insertion tube
- Knobs at ends of arms now close the open end of inserter
- Fix threads in cleft at near end of inserter shaft
Step 3: Set upper edge of flange at uterine sound depth

Set upper edge of flange at uterine sound depth
Step 4: The LNG IUS is now ready to be inserted

- Hold slider with your forefinger or thumb firmly in most forward position.
- Move inserter carefully through cervical canal into uterus until flange is about 1.5-2 cm from cervix allowing sufficient space for arms to open.
Step 5: Releasing the Arms

While holding inserter steady release arms by pulling slider back until it reaches mark (raised horizontal line)

Wait 10-30 seconds for arms to completely open
Step 6: Fundal Positioning

- Hold slider in position
- Advance inserter gently until flange touches cervix
- The system should now be in fundal position
Step 7: Release of the LNG IUS

- Hold inserter steady and release LNG IUS by pulling slider all the way back.
- Check to see threads have been released from cleft automatically.
Step 8: Cut the Threads

- Remove inserter carefully from uterus
- Cut threads to leave at least 3 cm visible outside cervix
Women can (and do) touch themselves “DOWN THERE”
A 22 yo woman comes in requesting contraception. She doesn’t want to use hormones, and wants something she can control. She has one male partner, but not the same one she had 5 months ago and isn’t positive about his current number of partners. What options does she have?
Female Condom

- Polyurethane, so ok in latex allergic patients
- Less likely to tear than male condom
- 95% effective in ideal use
  - 80-90% effective in typical use
- Does provide STD prevention
Female Condom

- Inner ring goes into the upper part of the vagina
- Outer ring should be visible outside the vagina
- Do not need spermicides
- Needs to be removed before standing up
Female Condom

- In one study, 1/3 of men prefer the female condom to the male condom
  - Roomier
  - Felt more natural
- Can by put in up to 8 hours before intercourse
  - No need to interrupt intercourse
  - No need to withdraw penis while erect
  - Cannot use with male condom
Diaphragm

- Put in to cover the cervix
- Needs to be fitted to the individual woman
  - Some women may not be able to use diaphragm
- Need to use with spermicide for maximal effectiveness
Diaphragm

May be placed up to 1 hour before intercourse
  – Needs to stay in 6-8 hours after intercourse
  – May stay in place for up to 24 hours
  – Spermicide should be re-inserted if intercourse is repeated in > 6 hours

May be used during menstruation

Need to check for holes before each use
Diaphragm

- 94% effective with spermicide in ideal use
  - 80% effective with usual use
- May need to be refitted:
  - Post partum
  - After abdominal or pelvic surgery
  - Weight change \( \geq 10 \) pounds
  - Every 2 years
- May increase rate of UTIs
- Less protection against HIV compared with other STDs
A 32 year-old non-smoking woman presents to discuss contraception options. She has been using combination OCPs but finds it difficult to remember to take her pills at the same time every day. She is in a new relationship. She wants something that “won’t stand out” and that might help her with her menstrual migraines. She’s heard about “the ring”. What do you think?
Vaginal Ring

- Flexible, nontoxic, inert materials:
  - Polysiloxane
  - Ethylene-vinyl acetate

- Smaller than diaphragms

- Containing sex steroids:
  - 120 μg Etonogestrel + 15 μg Ethinyl Estradiol
Vaginal Ring: Benefits

Constant steroid release:
- Steady state serum steroid concentrations
- No first pass hepatic metabolism
- Lower dose of steroids

Local effects of steroid release:
- Improved bleeding profiles

Compared with 30μg Combination OCPs
- No daily fluctuations in serum concentrations
- Levels of etonogestrel are similar
- Levels of ethinyl estradiol are half
Vaginal Ring

- Highly effective
- No significant changes in lipids, blood pressure, weight

Dieben et al., Ob Gyn, 2002
Contraceptive Vaginal Rings: How on earth do you insert it?

- Simply placed in the vagina
- No fitting or special placement needed
- Only contact with vaginal epithelium required
Counseling points

- Insert within 5 days of onset of menses
- Wear continuously for 3 weeks
- May be removed for up to 3 hours without affecting efficacy
- If it falls out, rinse with tap water before replacing
  - DO NOT USE SOAP
What’s Old is New Again!

New ways of thinking about old favorites
An 20 year old college student comes to your office requesting contraception. She is sexually active and wants to avoid pregnancy. She has used oral contraceptive pills in the past, but says she “could never remember to take them.” She has heard of a “shot” that can prevent pregnancy, but her friends have told her that “it makes you fat”. She wants something that is easy to use, and states “I just don’t want to worry about it.”
So, for our patient, we want a contraceptive that is…

- Easy to use
- Effective
- Associated with minimal side effects
- Low maintenance
- Acceptable for her lifestyle
OrthoEvra Contraceptive Patch

- First transdermal contraceptive method
- Approved by FDA in 2001
- Delivers norelgestromin 150 μg and ethinyl estradiol 20 μg into systemic circulation every 24 hours
OrthoEvra Patch: Advantages compared to OCs

- Does not require daily attention
- Holds a dosing reserve greater than 7 days
- Delivers steady-state hormone levels
- No first-pass effect
OrthoEvra Patch: Comparison to COCs

- Improved compliance when compared to COC’s
- Efficacy, adverse events, weight gain similar to that seen with COC’s

Audet, MC et al. JAMA, 2001
Sibai et al. Fertil Steril 2002
## Counseling about the “What-Ifs?”

<table>
<thead>
<tr>
<th>What if …</th>
<th>The patient should …</th>
</tr>
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</table>
| “I forget to change the patch?” | • apply a new patch if < 48h  
|                         | • apply a new patch if > 48h  
|                         | • and use back-up x 1 week                                |
| “I go swimming or work-out?” | • do these activities; the patch stays on under a variety of conditions |
| “It falls off?”         | • reapply to same site or replace with new patch if detached <24h  
|                         | • start new patch if >24h and use back-up x 1 week         |
| “I get a rash?”         | • know that rashes are mild in severity and can be treated with topical steroid creams |
A 32 year old woman presents to you for evaluation of premenstrual symptoms. For several days each month she experiences bloating, severe pelvic pain, headaches, and irritability. The patient is sexually active, and uses oral contraception to prevent pregnancy. She notes that these symptoms always occur around the time of her menses, and often cause her to miss work. She is in danger of losing her job because of her frequent absences. The patient is so frustrated that she wants a referral for a hysterectomy just so she can resume a normal life.
So, for our patient, we want a contraceptive that...

- Decreases pre-menstrual symptoms
- Is effective
- Has few side effects
Extended-cycle oral contraceptives

- Many women experience significant symptoms during menses
- Extended-cycle COC’s can reduce menstrual migraines and pre-menstrual symptoms, and improve QOL
- Seasonale®: 150 μg of levonorgestrel with 30 μg EE for 84 days followed by 7 days of placebo
  - Similar efficacy to conventional COCs
  - Number of unscheduled bleeding days decreases over time

Sulak, Am J Ob Gyn, 2002
Consider extended-cycle OCs in women who have…

- Dysmenorrhea
- Hypermenorrhea
- Menstrual migraine
- Pre-menstrual syndrome
- Difficulty remembering to take the pill!
### Counseling about the “What-Ifs?”

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<tbody>
<tr>
<td>“I have breakthrough bleeding?”</td>
<td>• be reassured that it will decrease with each successive cycle</td>
</tr>
<tr>
<td>“I want to get pregnant?”</td>
<td>• be reassured that return to fertility is similar to that of conventional OCs</td>
</tr>
<tr>
<td>“I am already on oral contraceptive pills?”</td>
<td>• use these for extended cycling; although seasonale is a dedicated product, extended cycling can be done with most oral contraceptives</td>
</tr>
</tbody>
</table>
On Monday evening, you receive a phone call from a 44 y.o. female patient in your partner’s practice. This patient, who is married and has two children, just returned from a romantic 3 day “weekend getaway” with her husband. She says that been taking oral contraceptive pills for the last several months to “regulate her periods” but forgot to take them on the trip. Her last pill was Friday morning, and she was planning on restarting them today. She wants to make sure that this is ok. What do you tell her?
Questions to consider…

- *Is this patient at risk for unintended pregnancy?*

- *Is she a candidate for emergency contraception?*

- *If she is, what would you prescribe? How would she take it?*

- *Do you need to examine her or perform any test before you prescribe it?*
Who is at risk?

Any woman who is fertile and does not desire pregnancy
Emergency Contraception: Who is a candidate?

Any woman not desiring pregnancy who has had unprotected intercourse in the past 120 hours (5 days)
Emergency Contraception: What is it?

- Post coital administration of spermicidal or hormonal agents up to 120 hours (5 days) after unprotected intercourse to prevent pregnancy

Currently available EC regimens

- Yuzpe
- Levonorgestrel
- IUD
## Emergency Contraception: Mechanism of Action

<table>
<thead>
<tr>
<th>How does it work?</th>
<th>How does it NOT work?</th>
</tr>
</thead>
<tbody>
<tr>
<td>✗ Delay or inhibit ovulation</td>
<td>✗ Does NOT cause abortion</td>
</tr>
<tr>
<td>✗ Interfere with sperm function</td>
<td>✗ Does NOT cause birth defects</td>
</tr>
<tr>
<td>✗ Interfere with tubal transport</td>
<td>✗ Does NOT cause ectopic pregnancy</td>
</tr>
<tr>
<td>✗ Prevent implantation</td>
<td></td>
</tr>
</tbody>
</table>

What would you prescribe?

Plan B®

- Approved by FDA in 1999 as a dedicated product for emergency contraception
- Two pills, each of which contains levonorgestrel 0.75 mg
- First pill taken within 72 hours of unprotected intercourse
- Second pill taken 12 hours later
What’s new with Plan B®?

- **Simplified dosing**
  - Both pills can be taken at the same time

- **Extended time interval**
  - Can be taken up to 120 hours after unprotected intercourse

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## Counseling about the “What Ifs?”

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<td>- The patient calls for the prescription?</td>
<td>- provide it. There is no need to examine the patient or order testing prior to providing the prescription.</td>
</tr>
<tr>
<td>- The patient asks for an advance prescription?</td>
<td>- provide it. Women with advance prescriptions are more likely to use EC after unprotected intercourse.</td>
</tr>
<tr>
<td>- The patient does not have her period after taking it?</td>
<td>- administer a pregnancy test. 98% of women will have a period within 21 days.</td>
</tr>
<tr>
<td>- The patient has oral contraceptive pills at home?</td>
<td>- prescribe Plan B®. Plan B® is more efficacious and associated with fewer side effects than combined OCs.</td>
</tr>
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