The Pelvic Exam and Cervical Cancer Screening

VETERANS HEALTH ADMINISTRATION

WOMEN VETERANS HEALTH CARE EDUCATION & TRAINING

Objectives

- Review role of the pelvic exam – screening vs. diagnostic
- Discuss the epidemiology and etiology of cervical cancer
- Review current screening guidelines
- Describe how results are reported
- Explain how to manage abnormal results
- Discuss indications and benefits of the HPV vaccine

ACP American College of Physicians — Leading Internal Medicine, Improving Lives

CLINICAL GUIDELINE

Screening Pelvic Examination in Adult Women: A Clinical Practice Guideline From the American College of Physicians

Amir Qaseem, MD, PhD; Linda L. Humphrey, MD, MPH; Russell Harris, MD, MPH; Melissa Starkey, PhD; and Thomas D. Denberg, MD, PhD, for the Clinical Guidelines Committee of the American College of Physicians*

REVIEW | Annals of Internal Medicine

Screening Pelvic Examinations in Asymptomatic, Average-Risk Adult Women: An Evidence Report for a Clinical Practice Guideline From the American College of Physicians

Hanna E. Bloomfield, MD, MPH; Andrew Olson, MD; Nancy Greer, PhD; Amy Cantor, MD, MHS; Roderick MacDonald, MS; Indulis Rutks, BS; and Timothy J. Wilt, MD, MPH

Screening pelvic exams… *an evolving discussion*

THE AMERICAN COLLEGE OF OBSTETRICIANS AND GYNECOLOGISTS

Office of Communications
tel: 202-484-3321
communications@acog.org
www.acog.org

ACOG Practice Advisory on Annual Pelvic Examination Recommendations

June 30, 2014

What the literature says…

- No evidence for benefits
- Potential harms

PRO or CON: Areas of Agreement

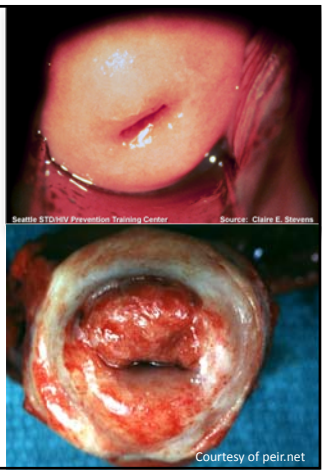
- Take a good history – screening or DIAGNOSTIC?
- Have an informed discussion regarding pros and cons
- Don't use pelvic exams as a pre-requisite for other care
- Specimen collection (Pap, GC/CT) vs. bimanual exam

Pelvic Exam

Asymptomatic	• Screening
Symptomatic	• Diagnostic

Why Screen for Cervical Cancer?

- 9,000 cases/year
- Screening reduces mortality
- Never screened: 50% of cases
- No screening in 5 years: 10% of cases



Risk Factors for Cervical Cancer
CHRONIC HPV INFECTION

At-risk for contracting HPV	At-risk for not clearing HPV	In utero exposure	Screening access issues
Multiple partners	Smoker	DES	Low SES
HIV	HIV		Immigration from place where screening is not norm
Early age first intercourse (<17)	Immunosuppressed		
Multiple pregnancies			
Long-term OCP use			

HPV = human papillomavirus

Human Papillomavirus (HPV)

Highest Risk Types	Lowest Risk Types
16 & 18	6 & 11
70% of cervical cancers	Genital warts, mild cervical dysplasia

Incidence of Types 6/11/16/18

Age group	Incidence per 100 person years
24-29	**7.4 (5.9 – 9.2)**
30-34	**3.6 (2.4 – 5.1)**
35-39	**2.4 (1.5 – 3.6)**
40-45	**1.9 (1.2 – 3)**

- New infection is less likely with older age
- Older women are less likely to clear infection

Screening Guidelines

When to Start Screening? 21

For women under 21…

1. Invasive cervical cancer is extraordinarily rare (<0.1%)
2. HPV is common but usually clears in 1-2 years
3. Cellular immaturity can cause misdiagnosis
4. Dysplasia treatment is associated with premature births

Women Ages 21-29

How Frequently Should We Screen?

3-year intervals with cytology

No HPV screen

*useful for triage

Compared to annual Pap:

- Same lifetime cancer risk
- 2x colpo rate with annual screens

Women Ages 30-65

How Frequently Should We Screen?

Option 1

- Co-testing Cytology and HPV at 5-year intervals

Option 2

- Cytology at 3-year intervals if HPV co-testing is not available

Provide similar benefits

When to Stop Screening?

Hx of high-grade lesion or cancer: screen routinely for 20 years post-diagnosis

Stop at 65 with adequate recent screens AND no hx of ≥ high grade dysplasia in 20 years

Do not resume screening once stopped

Adequate screening:

1) 3 consecutive neg Paps, or
2) 2 consecutive neg Paps with neg HPV results in 10 yrs prior to screening cessation with most recent test in last 5 yrs

- Progression to cervical cancer is slow
- HPV will often clear on its own
  - 70% of new infections clear within 1 year; up to 91% in 2 years
  - Patient may remain immune to that subtype for up to 3 years
- Do no harm
- Guidelines don't always fit

- Screen high-risk women more frequently
  (Hx of high grade cervical lesion, DES exposure in utero, transplant, immunocompromised)
- No screening after hysterectomy if cervix was removed AND no previous high grade lesions or cancer

HPV Testing Alone – The future?

More data needed

Not currently recommended

If your exam of the cervix was abnormal, do not be reassured by a normal Pap report…

REFER!

Pap Smear Collection Supplies

Photo courtesy of Michael Crawford / Bpac NZ

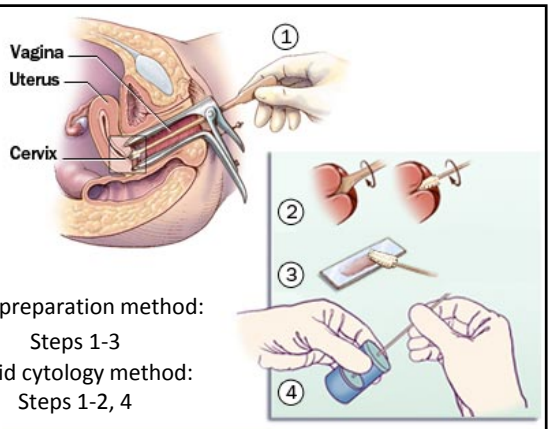
- Endocervical brush and spatula used together
  - Brush samples endocervix
  - Spatula samples ectocervix
- Broom can be used alone
  - Longer bristles inserted in os to sample endocervical canal
  - Shorter bristles sample ectocervix

Pap Collection Processes

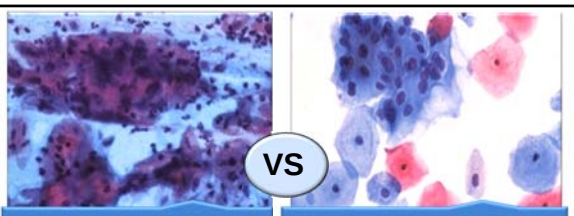
Slide preparation method

or

Liquid cytology method



Slide preparation method:
Steps 1-3
Liquid cytology method:
Steps 1-2, 4



Conventional Pap smear slide

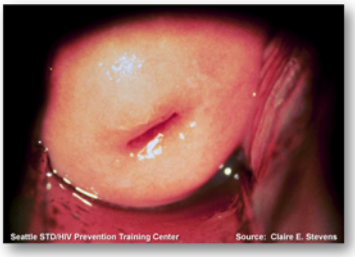
ThinPrep® (one liquid-based cytology brand)

Images provided courtesy of HOLOGIC, Inc. and affiliates

Liquid-based cytology provides:

1. Ability to do reflex HPV testing
2. No differences in detection of high grade lesions
3. Better detection of glandular abnormalities
4. Ability to perform Pap smears during menstruation

Bethesda Reporting System



Specimen Adequacy

↓

Descriptive Diagnosis

↓

General Categories

Specimen Reports

Unsatisfactory for interpretation (not enough cells) → Repeat Pap in 2-4 months

Satisfactory but no EC/TZ identified or partially obscured → Follow usual screening guideline

Pap reports may also mention…

Organisms

- Trichomonas, herpes changes
- Candida, gardnerella/bacterial vaginosis, actinomyces

Reactive Changes

- Inflammation from infection or irritation
- IUD-related
- Atrophy
- Benign endometrial cells

Epithelial Cell Abnormalities

Squamous

- Atypical Squamous Cells of Undetermined Significance (ASC-US) - 3% of Pap smears
- Atypical Squamous Cells, Cannot Rule Out High-Grade Squamous Intraepithelial Lesion (ASC-H)
- Low-Grade Squamous Intraepithelial Lesion (LGSIL)
- High-Grade Squamous Intraepithelial Lesion (HGSIL)
- Squamous Cell Carcinoma - 90% of cervical cancers

Glandular

- Atypical (AGC)
- Endocervical Adenocarcinoma in situ
- Adenocarcinoma - 10% of cervical cancers

Abnormal Pap Smear Terminology

Cytology (Pap) terms	Histology (biopsy) terms	Lay terms
ASC-US	Atypia or metaplasia	Inconclusive; f/up
ASC–H	Varies	Colpo; 1% cancer
LSIL or LGSIL	CIN1 (mild dysplasia)	Colpo; 1% cancer
HSIL or HGSIL	CIN2 (moderate dysplasia) CIN3 (severe dysplasia)	Colpo; 1-5% cancer
AGC	Glandular atypia mild/severe Adenocarcinoma in situ	Colpo+endometrial bx; 30% cancer

When HPV is positive & cytology is normal…

Women ages 30-65 - Two options

Repeat co-testing in 1 year

- Colpo if HPV+
- Colpo HPV- with ≥LSIL
- Co-test in 3 yr if HPV- & ≤ASC-US

Genotype test for HPV 16/18

- Colpo if HPV+
- Co-test in 1 year if HPV-

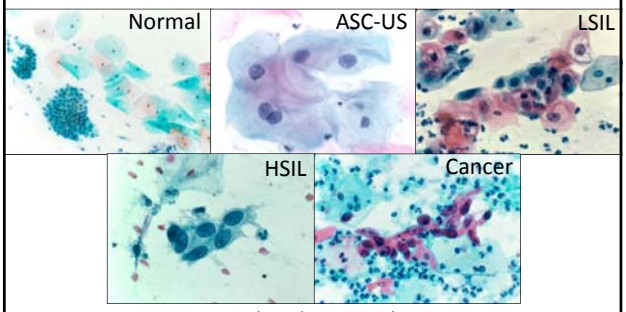
When HPV is positive & cytology is normal…

Women ages 30-65 (continued)

Risk at 1 year warrants repeat co-testing in 12 months, but not immediate colposcopy

	CIN3 risk	Cancer risk
1 yr	<1% - 4.1%	0.08%
3 yrs	2.2% - 7.0%	
5 yrs	5.9% - 9.3%	
>10 yrs	16% - 21.2%	

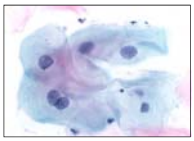
Managing Abnormal Cytology Results



Microscopic photos by Dianne Solomon, MD

ASC-US

Three ways to evaluate…



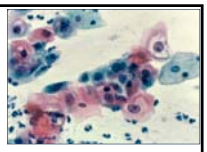
1. **Triage by HPV testing**
   If high-risk HPV+, refer for colpo (risk of CIN2 or worse is >15%)
2. **Repeat Pap in 12 months**
   If ASC-US or worse, refer for colpo
3. **Colposcopy**
   (in selected circumstances)

ASC-H

Atypical squamous cells – cannot exclude HSIL

- Risk of CIN 2 or worse is up to 50%
- HPV triage is not indicated
- Refer for colposcopy

LSIL



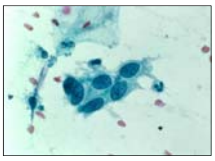
Risk of CIN2+ is significant

- Higher risk of CIN3+ for women >25
  - Women >25 yo, refer for colposcopy
  - Women 21-25, repeat Pap in 1 year

No role for HPV testing

- Except to triage postmenopausal women

HSIL



Women of all ages… refer for colposcopy

Glandular Cell Abnormalities

Atypical Glandular Cells (AGC)

- Colposcopy + endometrial biopsy indicated
- High rates of glandular or squamous disease
- Pap smears less sensitive for detecting glandular dysplasia and malignancy

	CIN2/3	Cancer
AGC-NOS	9-41%	1-9%
AGC	27-96%	5%

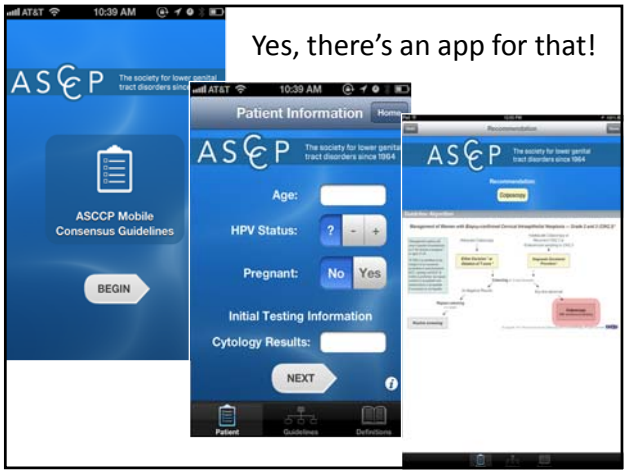
When is HPV Testing Useful?

- Triage ASC-US results
- Follow-up for women post colposcopy / treatment
- Stratify postmenopausal women with LSIL
- Co-test women ages 30-65

When is HPV Testing **NOT** Useful?

- Women <30 unless ASC-US Pap result (HPV is more likely to be present in this age group)
- Prescreening for HPV vaccination
- STI screening
- Women >25 with ASC-H, LSIL, HSIL (refer for colposcopy regardless of HPV status)

Pap neg AND HPV(+) AND 16/18(+) OR 1-yr repeat Pap or HPV abnormal	ASC-US AND HPV(+) AND ≥ age 25 (21-25 if persistent)	LSIL AND ≥ age 25 (21-25 if persistent)
Who needs colposcopy?	ASC-US x 2 if no HPV testing	HSIL
ASCCP Guidelines	ASC-H	ACG



HPV Vaccines

HPV Vaccine Facts

- More effective if no prior HPV exposure, but ok to give even with known HPV
- Protects at least 7-10 years
- Don't test for HPV before vaccinating
- $125/dose, $375 for full series
- Gardasil® on VA formulary
- Does not replace regular screening

Three HPV Vaccines

Gardasil® and Gardasil 9®

- Gardasil: quadrivalent vaccine for subtypes 6/11/16/18
  - Women and men ages 9-26
- Gardasil 9: 9-valent vaccine for 6/11/16/18/31/33/45/52/58
  - Women ages 9-26; men ages 9-15
- Similar dosing: three 0.5-mL doses IM at 0, 2, 6 months
- Prevent CIN, genital warts, anal/vulvar cancers and precursors

Cervarix®

- Bivalent vaccine for subtypes 16/18
- Women ages 9-26
- Three 0.5-mL doses IM at 0, 1, 6 months
- Prevents CIN 2/3, less protection for genital warts

Efficacy of HPV Vaccines

% decrease in CIN2+ in vaccine group (vs. placebo)	
Women who are negative for all vaccine HPV types and following protocol… >99%	Women who may have had prior HPV exposure and/or did not follow protocol… 45 – 55%
Nearly identical for both bivalent/quadrivalent vaccines	

HPV Vaccine Contraindications and Risks

Not for women with

- Pregnancy
- Moderate to severe acute illness
- Yeast allergy

Adverse events

- Fainting in adolescents likely due to injection process (keep patient in the area for 15-20 min)

What to do if a patient has begun but not completed the HPV vaccine course…

- If the vaccination series is interrupted for any length of time, it can be resumed without restarting the series

Summary

- Follow screening guidelines
- ASC-US HPV+ or worse: refer for colposcopy
- Long-term follow-up for history of high grade
- HPV Vaccinations: safe and effective

Authors

Catherine Staropoli, MD
VA Maryland Healthcare System
Baltimore, MD

Kathleen McIntyre-Seltman, MD
Pittsburgh VA Healthcare System
Pittsburgh, PA

Contributors: Linda Baier Manwell, MS
University of Wisconsin School of Medicine & Public Health, Madison WI

Karen Goldstein, MD, MPH
Durham VA Medical Center, Durham NC

Vaginitis and Sexually Transmitted Infections

VETERANS HEALTH ADMINISTRATION

WOMEN VETERANS HEALTH CARE EDUCATION & TRAINING

Objectives

- Identify common causes of vaginitis
- Describe risks, symptoms, treatment, prevention strategies, and patient education for common vaginal infections
- Explain the components of a good sexual history
- Discuss how to evaluate risk for sexually transmitted infections (STIs) and how they present in women

Vaginitis

1. *Common reason U.S. women visit the provider*
2. *More than **10 million** office visits yearly*
3. *Can be related to infections that are transmitted by sexual contact*

Most Common Causes of Vaginitis

Overgrowth of vaginal flora/ organisms	Sexually transmitted infections	Non-infectious causes

Initial Questions

Timing	• How long? First time or recurrence?
Description	• Odor? Itching? Bleeding?
Sexual history	• New partners?
Medications	• Recent antibiotics?
Comorbidities	• HIV? Diabetes?
Personal habits	• Douching? Lubricants?

Approach to Vaginitis

Assess discharge (color, viscosity, odor, adherence to vaginal walls)

↓

Examine for cervicitis

↓

Diagnostic testing (pregnancy, pH, wet mount, cultures, BD Affirm)

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Consider pregnancy risk (discuss birth control/emergency contraception)

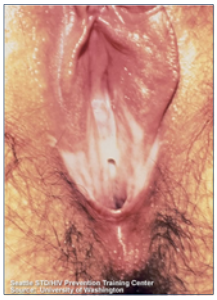
Diagnostic options

- pH paper/wet mount/KOH
- Vaginitis DNA probe
- Bacterial culture
- Gonorrhea/Chlamydia NAAT of urine
- Gonorrhea/Chlamydia NAAT of cervix

Bacterial Vaginosis + Candidiasis + Trichomonas =

90% of vaginitis cases

Bacterial Vaginosis (BV)



- Imbalanced vaginal flora
- Most common cause of discharge, but 50% of women asymptomatic
- Risk factors: douching, deodorant sprays, contact irritants
- Associated with acquiring STIs, pregnancy complications, post-op infections

Bacterial Vaginosis

Symptoms
- Fishy odor
- Thin, milky-white discharge

Exam
- Discharge smoothly coats vaginal walls

Diagnosis
- Wet mount or vaginitis DNA probe

BV Treatment

First choice
- Metronidazole 500mg BID x 7 days

Second choice
- Metronidazole gel or clindamycin cream

Treat *symptomatic* patients

NOT an STI

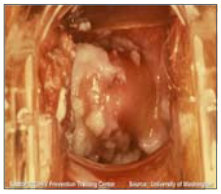
Partners don't need treatment

Avoid douching, scented panty liners, topical irritants

30% recurrence rate in 3 mos, 50% in 12

Patient Education for BV

Vulvovaginal Candidiasis (Yeast infection)



- Overgrowth of normal vaginal flora
- 75% of women experience during lifetime
- 50% have recurrences
- Risk factors: antibiotics, DM, pregnancy, immunosuppression, HIV, corticosteroids, exogenous estrogens, douching, spermicides

Vulvovaginal Candidiasis

Symptoms
- Itching, redness, burning with urination
- No odor

Exam
- Thick, clumpy, cottage cheese discharge
- Vulvar induration, fissures

Diagnosis
- Wet mount or vaginitis DNA probe

Treatment: Vulvovaginal Candidiasis (VVC)

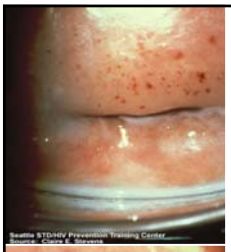
Uncomplicated	Oral fluconazole or intravaginal anti-fungal
Severe VVC/ Compromised host	Extended course
Recurrent VVC	Extended course + suppressive therapy
Non-albicans VVC	Non-fluconazole therapy

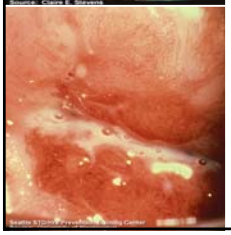
Sexual partners do not need to be treated

Avoid douching or feminine sprays

Plastic or polyethylene condoms during treatment

Patient Education for Candidiasis





Trichomoniasis

- 70-85% of women are asymptomatic
- Risk factors: multiple partners, low SES, STI history
- Can last for years without treatment
- May facilitate HIV transmission

Trichomoniasis

Symptoms
- Frothy, yellow-green discharge
- Vaginal itching, irritation, occasional dysuria
- Sometimes asymptomatic/No odor

Exam
- Vaginal discharge
- Strawberry cervix (10% of cases)

Diagnosis
- Wet mount or vaginitis DNA probe

Trichomoniasis Treatment

- Metronidazole 2 grams x 1
- Sexual partners must be treated
- No metronidazole during first trimester of pregnancy - increased risk of kernicterus

Metronidazole side effects with alcohol

May facilitate HIV transmission

Partner must be treated

Can reoccur; re-evaluate if symptoms persist

Patient Education for Trichomoniasis

Remember Other Causes of Vaginitis

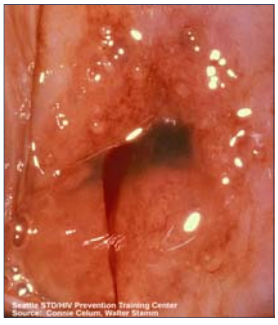
Atrophic vaginitis	Retained foreign body	Allergic reaction
Surgical site infection	Post-childbirth granulation tissue	Erosive lichen planus
Lichen sclerosis	Pemphigoid	Malignancy

25-40% of symptomatic patients will not have a specific cause after diagnostic testing

The Sexual History CDC 5 P's

Partners	• Men, women, both? Number of partners in past 2 mo? In past 12 mo?
Practices	• Vaginal/anal/oral sex? IV drug use? Ever exchange sex for money/drugs? • Condoms? When and with whom? If not all the time, in what situations?
Protection from STIs	• What is she doing? What is her understanding of what she should be doing?
Past hx of STIs	• Previous STIs in her or partner(s)?
Pregnancy prevention	• What is she using?

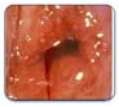
Chlamydia



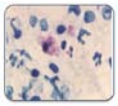
- Found in cervix, urethra, throat, rectum
- 75% of women are asymptomatic
- PID due to chlamydia can lead to scarring, infertility, tubal pregnancy
- Perinatal transmission results in neonatal conjunctivitis in 30-50% of exposed babies

Chlamydia

Symptoms
- Frequent/urgent urination with burning
- Vaginal discharge
- Post-intercourse light bleeding
- Abdominal pain



Exam
- Cervicitis, signs of PID (cervical motion tenderness, lower abdominal pain)



Diagnosis
- NAAT preferred (determine method of swab vs. urine)
- DFA (not as sensitive)

Screening ***Asymptomatic*** *Women* (USPSTF)

Yearly for all sexually active women ≤ 24yo

Yearly for sexually active women > 24yo with *risk factors*
- African American, new male sex partner, 2+ partners in last year, inconsistent condom use, hx of prior STI

All pregnant women at first prenatal visit

Chlamydia Treatment

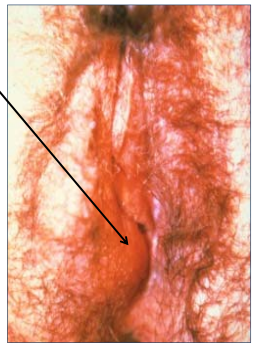
Antibiotics (azithromycin 1 g orally in single dose *or* doxycycline 100 mg orally twice daily x 7 days)

Retest at 3 months or when patient seeks care in next 12 months

Evaluate and treat partners

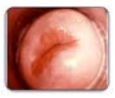
Gonorrhea

- Grows in vagina, cervix, urethra, mouth, throat, eyes, anus
- Can present with Bartholin's gland involvement
- Less common presentations include: PID, perihepatitis (Fitz-Hugh-Curtis)
- 50% of women asymptomatic
- Penetrance to women in 50% of sexual encounters



Gonorrhea

Symptoms
- Painful urination
- Vaginal discharge
- Bleeding between periods



Exam
- Cervicitis, Bartholin gland swelling, evaluate for PID or other locations

Diagnosis
- NAAT, DNA probe, endocervical culture

Gonorrhea Treatment

Dual therapy with Ceftriaxone as single IM dose, plus either azithromycin *or* doxycycline

Risk of PID

Increases susceptibility to HIV infection

Partner should be evaluated

Return for unresolved sx or those returning in 1-2 weeks

Re-test in 3-6 mos to rule out re-infection

Education for Gonorrhea/Chlamydia

CDC Minimal Criteria for Empiric Treatment of PID

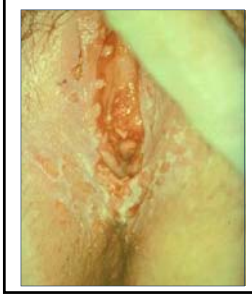
Sexually active young woman with lower abdominal/ pelvic pain

- *No other cause for illness identified*

PLUS at least 1 other finding

- *Cervical motion tenderness*
- *Uterine tenderness*
- *Adnexal tenderness*

Genital Herpes Simplex Virus (HSV-2)



- 25% of the population has serological evidence
- Contact transmission
- Complications: viral encephalitis
- Asymptomatic shedding
- Outbreaks can occur 4-5 times per year; most frequent in first year

Genital Herpes

Diagnosis

- PCR (asymptomatic virus shedding)
- Viral culture for active lesions
- Direct fluorescent antibody for clinical specimens

Treatment

- Oral antiviral meds
- Consider suppression for recurrent outbreaks
- Analgesics for pain

No cure

Sx may recur

Identify triggers (menses, stress, intercourse, sunbathing)

Inform partners

Can be transmitted when sx not present

Increases likelihood of spreading HIV

Inform provider if become pregnant

Patient Education for Genital Herpes

Syphilis

Condyloma lata lesions (secondary syphilis)

40,000 new cases/year

Primary: chancre or ulcer

Secondary: rash, lymphadenopathy

Tertiary: CNS, vascular, gumma

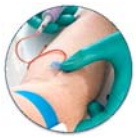
Syphilis

Diagnosis

- Nontreponemal = VDRL, RPR, TRUST
- Treponemal = FTA-ABS, TP-PA, EIA

Treatment

- Early/secondary: single-dose benzathine penicillin
- Late latent/unknown duration: benzathine penicillin (1 dose/wk x 3 consecutive wks)
- Clinical & serological FU test at 6 & 12 mo



Return for 6- and 12-month serologies

Screen during pregnancy

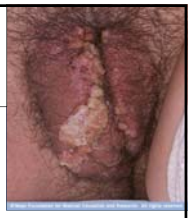
Partners should be treated

Increases likelihood of getting HIV

Patient Education for Syphilis

HPV-Related Genital Warts

(subtypes 6 and 11)



- Benign but very contagious
  - Can take 6 mos to develop
  - Women can be infected with no sx
- Pink or flesh-colored, raised/flat spots (cauliflower-like)
- Occur inside/outside vagina or anus, on nearby skin, cervix, lips, mouth, tongue, throat

Treatment

- Creams (Podophyllin TCA, Aldara or imiquimod 5%)
- Cryosurgery, lasers, electro-cauterization, excision

Non-curable, can return

Benign, but very infectious

Get routine Pap smears

Condoms help prevent infection; don't cover all skin

Topical treatments can cause changes in pigmentation

Gardasil™ for <27yo

Patient Education for Genital Warts

Human Immunodeficiency Virus (HIV)

Growing problem for older women Veterans; women have a higher seropositivity than men

Testing:

- CDC: screen ***everyone*** for HIV, any time at any site at least once, and yearly for anyone at risk
- VA: no age limit; verbal consent required; no pre-post test counseling required; must provide written info
- POC testing now available (OraQuick®)
- VHA directive currently being updated

VHA has Guidance Statements on Clinical Preventive Services

- Screenings, immunizations, brief health behavior counseling, preventive medications

Approved statements are posted

- http://vaww.prevention.va.gov/Guidance_on_Clinical_Preventive_Services.asp

Authors

Catherine Staropoli, MD
VA Maryland Healthcare System

Karen Goldstein, MD, MSPH
Durham VA Medical Center

Linda Baier Manwell, MS
University of Wisconsin-Madison

Kathleen McIntyre-Seltman, MD
VA Pittsburgh Healthcare System

Menopause

VETERANS HEALTH ADMINISTRATION

WOMEN VETERANS HEALTH CARE EDUCATION & TRAINING

Objectives

- Define menopause and perimenopause
- Appropriately assess women presenting with menopause-like symptoms
- Review common symptoms and discuss management options

Case 1
Jenny

Jenny, a 45-year-old Veteran, presents complaining of irregular menstrual cycles and hot flashes for the last 6-9 months.

She asks you to "check her hormones" to see if she is going through menopause.

Initial Assessment

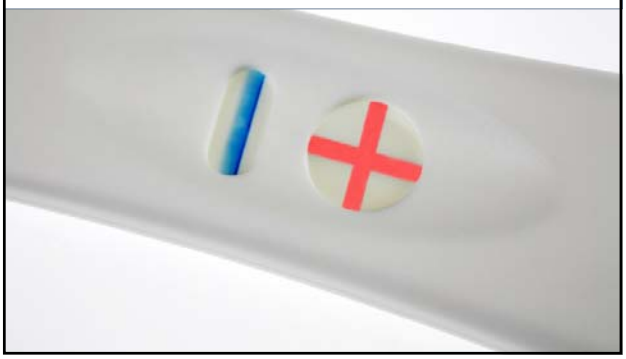
Make sure it is not…	Identify triggers	Determine impact on the Veteran
Cardio-pulmonary	Situations	Physical
Infection	Stress	Emotional
Hypoglycemia	Food/alcohol intake	Psychosocial
Med reaction		
Thyroid		

Premature Menopause	• Loss of menstrual cycles before 40
Perimenopause	• Transition from regular ovulatory cycles toward permanent infertility • Includes 1 year after last cycle
Menopause	• Permanent cessation of menstruation due to loss of ovarian function • No menses for >12 mos in women >45 • Average age is 51

Menstrual Changes in Perimenopause

"Normal" flow	Changes
• 21-35 days apart	• 4-8 years before menopause
• Duration: 3-7 days	• Cycle length: may stretch to every 60-90 days or shorten to every 20 days
• Reddish-brown, slightly darker than venous blood	• Duration: 1 day to 10-12 days
	• Flow range: very scant to very heavy, bright red bleeding
	• Cycles often anovulatory

Pregnancy is still possible…



Case 1
Jenny
(continued)

Jenny notes that her irregular menses and hot flashes are very frustrating. She also notes trouble sleeping and feeling irritable.

"How long will I feel this way?"

Perimenopausal and Menopausal Symptoms

Menopausal Symptoms

Loss of libido	Mood swings	Hot flushes
Insomnia	Hair changes	Headache
Poor concentration, memory lapses	Urogenital symptoms	Anxiety, irritability, depression

Vasomotor Symptoms

- 50 - 82% of women
- Duration 4 - 10.2 years
- Feelings of intense heat for 30 seconds to 10 minutes
- Earlier onset of VMS predicts longer duration

Vasomotor Symptoms

Risk Factors

- Smoking
- Physical inactivity
- Obesity (perimenopausal and early postmenopausal women)
- Surgical menopause
- Race (African American/obese White women highest; Japanese/Chinese lowest)

Treatment for perimenopause symptoms are similar to those for menopause

- Low-dose OCP for nonsmokers
  - Can discontinue at age 50-51 when she is likely in menopause
- Cyclic progesterone
- Mirena IUD

Women with menopausal issues…

Role of the PACT

- Ask about menstrual cycles
- Ask about vasomotor symptoms
- Screen for mental health issues
- Consider pregnancy test

Case 2
Becky

Becky, a 55-year-old female with a history of obesity and smoking, presents complaining of 6-7 hot flashes per day and waking up nightly drenched in sweat. LMP was 2 yrs ago. She feels fatigued and crabby most of the time. The hot flashes are limiting her social activities and impairing her quality of life.

"Can you help me?"

Use a patient-centered approach…

- What is most important to her?
- How are her symptoms affecting her daily routine?
- What risk factors does she have?
- How important is it to her to manage her symptoms?
- How does she feel about medications?
- What lifestyle changes is she willing/able to make?

Case 2
Becky

Upon further discussion, you discover that while her vasomotor symptoms are making her miserable, Becky doesn't want any medications as she has heard "bad things" about hormone therapy.

She asks if there are any non-medication strategies.

Lifestyle Changes

- Identify triggers and avoid if possible
- Dress in layers
- Sip a cold drink when flushes occur
- Adjust room temperatures
- Use fans at home or in the workplace
- Lose weight to decrease flush frequency
- Don't smoke

Mind-Body Therapy	Efficacy	Comment
• Paced respiration • Acupuncture	Mixed results	
• Yoga	Possibly effective? Helps insomnia.	Small pilots, one randomized controlled trial
• Exercise	Negative effect on flushes. Benefits sleep.	Raises core body temp, thus triggering flushes
• Stress management • Relaxation therapy • Homeopathy • Magnet therapy	No effect	

Women who smoke cigarettes…

- Are 40% more likely to go into menopause earlier than nonsmokers
- Have more severe hot flushes, sleeping difficulties
- Are 35% more likely to break a hip after menopause

Case 2
Becky

Becky agrees to try lifestyle changes to manage her vasomotor symptoms including signing up for a yoga class at her gym.

Unfortunately, she returns 6 months later and notes that her symptoms have worsened and she is now ready to consider hormone therapy.

Hormone Therapy

- 1960. Estrogen is the Fountain of Youth!
- 1970s. Poison! (linked to endometrial ca)
- 1980s: Good! (prevents osteoporosis)
- 1990. Use expands! (protects the heart)
- 2002. Poison! (WHI study)
- 2015?

Hormone Therapy (HT)

Estrogen therapy seemed logical based on the ***hypothesis*** that menopause:

Decreased estrogen	Accelerated cardiovascular disease

Thus… giving estrogen would protect the heart

Women's Health Initiative (WHI)

Prospective study of estrogen + progesterone (Prempro) or estrogen alone on risks for CHD, breast cancer, hip fracture

- E+P for women with intact uterus
- E alone for women without

WHI Results

	E+P vs. placebo	Hazard ratio	E only vs. placebo	Hazard ratio
CHD	*164 vs. 122*	*1.29*	177 vs. 199	0.91
Stroke	*127 vs. 85*	*1.41*	*158 vs. 118*	*1.39*
DVT/PE	*151 vs. 67*	*2.13*	*101 vs. 78*	*1.33*
Breast ca	*166 vs. 124*	*1.26*	94 vs. 124	0.77
Colon ca	45 vs. 67	0.63	61 vs. 58	1.08
Hip fx	44 vs. 62	0.66	38 vs. 64	0.61
Death	231 vs. 218	.98	291 vs. 289	1.04

No beneficial effect of HT on cognitive function in older post-menopausal women when given for up to 5 years

Rossouw et al. *JAMA,* 2002; Anderson et al. *JAMA,* 2004.

Timing of HT and CHD

Most WHI women menopausal for at least a decade

- Older women likely had more extensive subclinical atherosclerosis

Hypothesis: prothrombotic and proinflammatory effects of estrogens occur primarily in women with subclinical lesions

- Conversely, women with less arterial damage who start HT early in menopause may derive cardiovascular benefits

Rossouw JE et al. *JAMA,* 2007.

Further Analyses of WHI Data

Both arms re-analyzed to look for trends in effect of HT on CHD, stratified by age and years since menopause

Women who started HT closer to menopause tended to have reduced CHD risk vs. increased risk seen in women more distant from menopause (trend not statistically significant)

Rossouw JE et al. *JAMA,* 2007.

Extended Follow-up of WHI Data

Neither regimen significantly affected all-cause mortality during or after intervention phase

- E-alone: Subset women 50-59 = ↓ MI & all-cause mortality
- E+P: ↑ CHD risk in older women; inconclusive for younger

Risk–benefit ratio of HT most favorable when started in younger menopausal women

- Most risks/benefits from HT dissipate after stopping

Manson JE et al. *JAMA*, 2013.

More studies reassure safety of HT if begun early in menopause…

Kronos Early Estrogen Prevention Study (KEEPS)

- No beneficial/harmful effect on atherosclerosis progression with HT vs. placebo after 4.8 years

BMJ TRIAL

- At 10-yr follow-up, women getting HT early after menopause had reduced risk of mortality without apparent increase in breast ca or stroke

KEEPS Report, NAMS 2012 Annual Meeting; Schierbeck L et al. *BMJ,* 2012.

Breast Cancer Risk with HT

WHI: risk higher with E+P when used >5 yrs; no risk for estrogen alone

F/U studies: risk increased if HT started shortly after menopause vs. after several years' delay

Timing for breast ca risk is opposite that for CAD risk!

Chlebowski RT et al. *JAMA* 2003; NAMS position statement. *Menopause* 2012; Beral V et al. *J Natl Cancer Inst* 2011.

Current Indications for HT

- Moderate-severe vasomotor symptoms related to menopause in healthy women
- Not for chronic disease prevention
- Do not start HT if >10 yrs after menopause
- Systemic hormones for short-term use only (<5 yrs)

Individualized decision based on risks for CVD, breast ca, osteoporosis as well as QOL

Contraindications for HT

- Breast/endometrial ca
- Porphyria
- Thromboembolic dz
- Unexplained vaginal bleeding
- Acute CVD
- Immobilization
- Known CAD or hx CVA
- Hypertriglyceridemia
- Atypical ductal hyperplasia of breast
- Active liver/gallbladder dz
- Uncontrolled HTN
- Migraines

Most women who want HT will want it within 5 yrs

Many more women will die of CAD vs. breast ca

With E+P <5 yrs, absolute ca risk is very low (lower than 1 alcoholic drink/day)

For women with avg cancer risk and significantly impairing hot flashes, recommend HT initiation when symptom control is needed most (early!)

HT and Shared Decision-Making:

Ultimately, it comes down to risks vs. benefits

Hormone Therapy Initiation

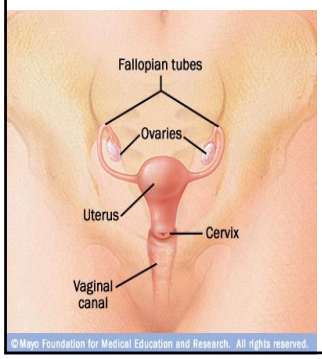
All routes of systemic therapy equally effective
- Transdermal lower risk of VTE vs. oral

Use lowest effective dose
- CEE 0.625mg/day oral (estradiol 50 mcg) or lower

Continuous regimen associated with fewer hot flashes
- Women on this regimen typically amenorrheic

NAMS position statement. *Menopause* 2012; Laliberte et al. *Menopause* 2011.

Don't forget progesterone!



For women with a uterus, add progesterone to protect against endometrial hyperplasia and cancer

2.5 mg of MPA per day

Compounded Bioidentical Hormones

- Typically custom-compounded; similar in chemical composition to those made endogenously
- No more effective than traditional HT; similar risks/side effects
- Educate patients in same manner as FDA-approved HT
- No rigorous RCTs to test safety/efficacy
- May combine several hormones, use non-standard routes of administration

Hormone Therapy Discontinuation

No optimal approach for immediate cessation vs. taper

Try prolonged 6-12 month taper if symptoms recur after an abrupt stop

NAMS: extended use of HT is reasonable for women who feel benefits of symptom relief outweigh risks

Case 3 Jessica

Jessica is a 53-year-old Veteran with a history of ER/PR+ breast cancer s/p treatment 2 years ago and a current smoker.

She presents with a complaint of "always being angry these days". Friends and co-workers have commented on her irritability, frequent hot flashes, red face, and sweating.

Alternatives to Estrogen for Hot Flushes

Non-Hormonal Medication Options

Placebo
- ~30% reduction in hot flashes

SSRIs
- Not FDA-approved except for Paxil 7.5mg daily
- Usually relieve symptoms in ~ 1 week
- Mechanism of action unknown (hypothalamus?)
- Low doses avoid some common side effects
- Caution paroxetine/fluoxetine with tamoxifen

Medications	Decrease in hot flush score
VENLAFAXINE (Effexor): antidepressant, 37.5 - 150 mg	27-61%
Desvenlafaxine (Pristiq): antidepressant, 100 & 150mg	60-65%
Fluoxetine (Prozac): antidepressant, 20 mg	40-50%
PAROXETINE (Paxil): antidepressant, 10 - 25 mg FDA-approved to treat menopausal hot flushes	38-62%
Escitalopram (Lexapro): antidepressant, 10 - 20 mg	47%
Citalopram (Celexa): antidepressant, 10 - 30 mg	23-55%
GABAPENTIN (Neurontin): anti-seizure, 300 - 2400 mg	45-65%

ACOG practice bulletin 141, 2014; Casper et al. UpToDate, 02/14/11, literature review through 11/14.

Menopause and Herbal Preparations

Data is extremely limited. Most studies indicate no effect.

Patient education for herbal preparations:

- May help symptoms, but we know little about all potential risks/side effects, especially with long-term use
- May interact with prescribed medications or increase risk for other conditions (e.g., estrogenic herbs may pose a risk for women with a history of/are at risk for breast cancer)
- Are not regulated as carefully by the FDA; dose may vary from batch to batch and there may be unknown contaminants
- If decide to use, let provider know ahead of time and bring bottles to visits so provider can see exact ingredients

Summary managing hot flashes

- Systemic HT most effective for mod-severe vasomotor sx
- Combined systemic HT risks=thromboembolic dz, breast ca
- Non-oral approach safer (no RCT evidence)
- Lowest effective dose continuously; evaluate yearly
- Estrogen + progesterone for women with uterus
- Consider non-hormonal alternatives (venlafaxine, gabapentin, paroxetine)
- Encourage smoking cessation, lifestyle changes, weight loss

Supporting women with menopausal complaints…

Role of the PACT

- Ask about methods that the patient is using to control hot flashes
- Encourage smoking cessation and weight loss
- Can help with follow up on efficacy of HT

Case 3 Jessica (continued)

After discussing non-hormonal treatment options, Jessica selects venlafaxine for her hot flashes.

6 months later, she returns and reports an improvement in her hot flashes. However, she notes that she continues to have severe vaginal dryness which is impairing her sex life.

Managing Menopausal-Related Vaginal and Urinary Symptoms

Vaginal Atrophy: Anatomical Changes

Image courtesy of Harvard Vanguard Medical Associates

- Decreased vaginal moisture
- Narrow introitus
- Loss of labial and vulvar fullness
- Pallor of urethral and vaginal epithelium
- Loss of urethral meatal turgor

Vulvovaginal Atrophy (VVA)

- Vaginal dryness, irritation, +/- discharge
- Dyspareunia (painful intercourse)
- Urinary sx (frequency, dysuria, incontinence)
- Physical exam changes
- Common in women on aromatase inhibitors or tamoxifen

Differential for VVA

- Autoimmune disorders
- Allergic or inflammatory conditions
- Chronic vaginitis
- Trauma
- Foreign bodies
- Vulvodynia
- Psychological disorders

Sexual Function & Menopausal Symptoms

- 75% middle-aged US women…
  - Sexual activity is moderately to extremely important
- Large cohort studies…
  - Vaginal dryness: 27% - 55% of women
  - Dyspareunia: 32% - 41%
- Common menopausal sx associated w diminished libido:
  - Depression (P=.003), insomnia (P=.02), night sweats (P=.04)

Cain VS et al., 2003; Reed SD et al., 2007; SOGC clinical practice guidelines #145, 2005.

VVA Management		Pros	Cons
Lubricants • Astroglide • K-Y Jelly • Olive oil	OTC	• Eases pain during intercourse	Doesn't change vaginal tissue
Moisturizers • Replens (formulary) • Vagisil	OTC	• Eases symptoms • Improves vaginal epithelium	Expensive option
Vaginal estrogen • Premarin cream • Estring • Vagifem	Rx	• Eases symptoms • Improves vaginal epithelium • No systemic effects	Not for women with breast ca?

Vaginal Estrogen Comparison

*Non-formulary

	Cream	Ring*	Tablet*
Dose	0.5-2gm nightly for 2 weeks, then 2x/week	5-10 mcg daily. Replace every 3 mos.	10 mcg nightly for 2 weeks, then 2x/week
Safety	No reports of endometrial ca	No endometrial proliferation at 1yr	No reports of endometrial ca
Notes	No rise in serum estrogen	Can achieve systemic estrogen levels	No systemic or endometrial absorption

NAMS, ©2012. http://www.menopause.org/publications/clinical-practice-materials/government-approved-drugs-for-menopause

VVA: Local Estrogen

Advantages

- Relieves atrophy
- May benefit sexual function
- Low dose is effective
- All preps equally effective
- Progesterone generally not needed for low-dose vaginal estrogen
- No endometrial safety data for use >1 yr

Disadvantages

- Involve oncologist in discussion of vaginal estrogen for breast cancer survivors if a hormone-sensitive cancer

NAMS position statement 2012; Suckling J et al., 2006; Rahn DD et al., 2014.

VVA: Systemic Estrogen

Systemic estrogen is not recommended for VVA treatment

Why incur systemic risks for a local problem?

NAMS position statement. *Menopause,* 2012.

Urinary Incontinence and Estrogen

Prevalence during menopausal transition is 8-56%

May improve with *local estrogen* therapy

- Unknown if benefits continue after stopping
- No info on long-term effects

Randomized trials: *oral estrogen* worsens incontinence

Cody et al. *Cochrane Database Syst Rev,* 2012.

UTIs and Estrogen

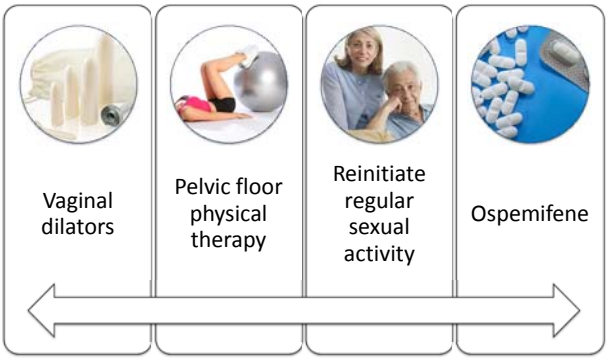
Oral estrogens don't reduce UTIs vs. placebo

2 studies: *vaginal estrogens* reduced number of UTIs in postmenopausal women with recurrent UTI

Intravaginal estrogen for postmenopausal women with 3+ UTIs/year, especially if resistance to multiple drugs limits antimicrobial prophylaxis

Perotta et al. *Cochrane Database Syst Rev,* 2008; Stamm WE. *J Infect* Dis, 2007.

Other Considerations



Summary: VVA Management

First-line: lubricants with intercourse and, if indicated, regular use of long-acting vaginal moisturizers

Estrogen for moderate-severe symptoms or if no response to lubricants and moisturizers

Spotting or bleeding in postmenopausal women requires thorough evaluation

ACOG. *Obstet* Gynecol, 2014; NAMS position statement 2012.

For more info, see *Female Sexual Dysfunction* lecture on VeHU

Author: Rachel Bonnema, MD, MS
Nebraska Western Iowa VA Health Care System
Omaha, NE

Contributors: Nina Ramchandani, MD
VA Palo Alto Health Care System
Palo Alto, CA

Karen Goldstein, MD, MPH
Durham VA Medical Center
Durham NC

Breast Issues

VETERANS HEALTH ADMINISTRATION

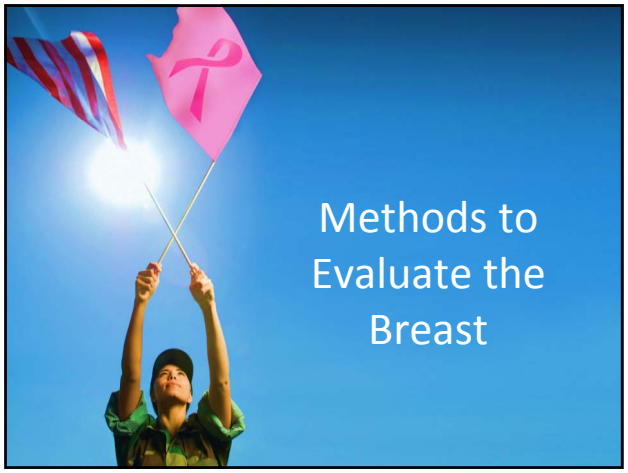
WOMEN VETERANS HEALTH CARE EDUCATION & TRAINING

Objectives

- Explain the guidelines and practices for breast cancer screening and breast cancer risk assessment
- Define the role of breast density in breast cancer risk and discuss the controversy surrounding management
- Describe the appropriate steps for breast mass triage and management
- Identify the causes and management of breast abnormalities in pregnancy and lactation

Case 1

A 43-year-old woman with no medical problems arrives to see you for a routine visit. She tells you that her friend (who is the same age) was just diagnosed with breast cancer. She asks what she should be doing to screen for breast cancer.



Methods to Evaluate the Breast

Breast Self-Examination (USPSTF)

Recommends against TEACHING breast self-exam

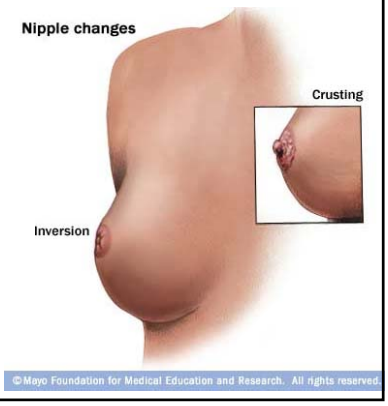
- Doesn't mean USPSTF opposes breast self-exam

Screening grade D: harms outweigh benefits

- Finding lumps that turn out to be normal leads to anxiety and unnecessary visits, imaging, and biopsies

Teach Breast Self-Awareness

- Be familiar with breasts
- Promptly report changes to provider
- Premenopausal women: examine breasts 1 week after menses ends



Clinical Breast Exam (USPSTF)

Screening grade I

- *Current evidence is insufficient to assess additional benefits and harms of clinical breast examination beyond screening mammography for women 40 years or older*

Discuss pros/cons of clinical breast exam with patient and include her in the decision

Mammography Screening (USPSTF)

Regular, biennial screening: women 40-49

- Decision to start before 50 should be individual one, taking patient context into account including patient values on specific benefits/harms (Grade C)

Regular, biennial screening: women 50-74

- Moderate net benefit (Grade B)

Regular, biennial screening: women 75+

- Current evidence insufficient to assess additional benefits/ harms (Grade I)

USPSTF. *Ann Intern Med* 2009;151:716-26.

USPSTF 2015 Draft Guidelines for Breast Cancer Screening

	2009 (current)	**2015 DRAFT**
Women 40-49 years	Decision should be an individual one	Decision should be an individual one
Women 50-74 years	Biennial screening mammography	Biennial screening mammography
Women, 75 years and older	Current evidence is insufficient to assess the benefits and harms	Current evidence is insufficient to assess the benefits and harms

Mammography: In the News

Twenty-five year follow-up for breast cancer incidence and mortality of the Canadian National Breast Screening Study: Randomised screening trial.

Miller et al. *BMJ* 2014;348:366

- 89,835 women ages 40-59 randomly assigned to:
  - mammography plus annual physical exam or
  - no mammography (plus a single physical exam for 40-49y; annual physical exam alone for 50-59y)

Implications

- No demonstrated mortality benefit (for women in 40-49y or 50-59y age groups at diagnosis)
- 22% of breast cancers detected by mammogram would not have become clinically apparent during the lifetime of a woman screened
- Is screening worthwhile in technologically advanced countries where there is access to comprehensive breast cancer treatment?

Back to the Case…

- You discuss the current guidelines for breast cancer screening with your 43-year-old patient.
- She tells you she is still a little unsure about how to decide whether to start screening now or wait until she is 50….

To Screen or Not to Screen: Ages 40-49

- There is no single correct answer!
- 2007 ACP Clinical Practice Guideline for Screening Mammography in Women ages 40-49
  - Periodic INDIVIDUALIZED assessment of breast ca risk
  - Discuss benefits vs. harms of screening
    - *Benefits:* diagnose cancer earlier, assessment of breast density
    - *Harms:* false positives and resultant testing, detecting, and treating a cancer that would not have become clinically evident
  - Discuss INDIVIDUAL patient preferences

Qaseem et al. *Ann Intern Med* 2007;146:511-5.

Recommendation	VHA	USPSTF Grade
Teach breast self-exam	Against	D: Harms > benefits
Clinical exam for screening beyond mammography for women 40+	Neither for nor against	I: Insufficient evidence
Biennial screening mammography: avg risk women <50	Individual decision	C: Small net benefit; may support doing for individual patient
Biennial screening mammography: women age 50-74	Recommend	B: Moderate net benefit
Mammography screening: women 75+	Neither for nor against	I: Insufficient evidence

Case 2

- A 50-year-old woman comes to your office for a routine visit. You take some time during the visit to update her family history. She tells you that her sister has been diagnosed with breast cancer at age 52. She asks, "Should I be worried about getting breast cancer too?"

Goals of Breast Cancer Risk Assessment

1. Determine if a woman should be referred for genetic counseling/testing for genetic mutations that carry increased risk for breast cancer
   - Appropriately managing women with BRCA1/2 mutations decreases breast ca incidence 80-95%
2. Estimate a woman's risk for developing breast cancer, and discuss risk reduction strategies as indicated
   - Enhanced screening, lifestyle changes, pharmacologic prevention, prophylactic surgery

Trivers et al. *Cancer* 2011;117:5334-43.

Goal #1: Assess for indications for genetic counseling/testing referral

Indications for referral for genetic counseling

- BRCA 1/2 mutation in family
- Breast ca before age 50 in affected relatives
- Bilateral breast ca
- Family history ovarian ca
- ≥ 2 breast cancers same side of family
- Male relatives with breast ca
- Ashkenazi Jew ***and*** a family history breast/ovarian ca

Smith et al. *CA Cancer J Clin* 2003;53:141-69;
Daly et al. *J Natl Compr Canc Netw* 2010;12:1326-38.

Goal #2: Estimate overall risk and discuss risk reduction strategies

Risk factors for breast cancer

- Dense breasts
- First degree relative with breast ca
- Current oral contraceptive
- Hx benign breast biopsy
- Obesity (postmenopausal)
- Caucasian
- More estrogen exposure
- Nulliparity
- Alcohol and/or smoking
- Chest radiation

Breast Cancer Risk Assessment Tool

http://www.cancer.gov/bcrisktool/

Gail Model

- Age
- Age at start of menarche
- Age at time of first live birth
- # of first degree relatives with breast ca
- Personal history of breast cancer or DCIS
- Ever had a breast biopsy
- Race/ethnicity

Breast Cancer Surveillance Consortium (BCSC) Risk Calculator

https://tools.bcsc-scc.org/BC5yearRisk/calculator

BCSC

- Age
- Race/ethnicity
- History of breast Ca, DCIS, or LCIS
- Any first degree relatives with breast Ca
- Prior breast biopsies (Y/N) and (+/-)
- **Breast Density**

Back to the Case…

- You determine, after obtaining a detailed family history, that your patient does not meet criteria for genetics counseling referral
- You discuss other breast cancer risk factors and use the Gail and the BCSC models to calculate her 5-year and lifetime risk for breast cancer (using breast density from her last mammogram)

Breast Cancer Risk Assessment

Gail Model

- Age: 50
- Age menarche: 14
- Age first live birth: 28
- 1st degree relatives: 1
- Breast ca or DCIS: No
- Breast biopsy: Yes (fibroadenoma)
- Race: White

5-yr risk: 2% (avg 1.3%)

BCSC

- Age: 50
- 1st degree relatives: Yes
- Breast ca, DCIS, LCIS: No
- Breast biopsy: Yes
- Race: White
- Breast density: scattered fibroglandular densities

5-yr risk: 2.16% (avg 1.25%)

Next Steps

Your patient has higher-than-average risk for developing breast ca

- Discuss risk-reduction strategies
  - Alcohol use
  - Exercise/weight control
- Referral to determine candidacy for other risk-reduction strategies (pharmacologic prevention, enhanced screening)
  - High-risk Breast Cancer Clinic vs. Oncology Clinic depending on local resources

Breast Cancer Risk Assessment Summary

Breast cancer risk assessment is an important role for the primary care PACT

Periodic re-assessment of family history is required to determine if referral for genetic counseling/testing is indicated

Online tools are available for risk estimation—not to be used for women with a strong family history

Consider referral for discussion of risk-reduction strategies for women at higher-than-average risk

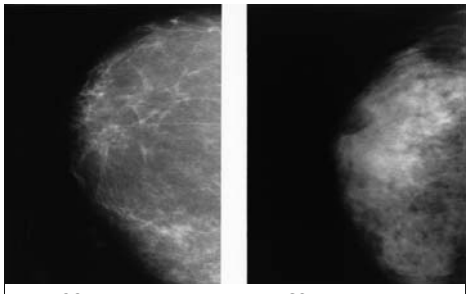
Case 3

- A 52-year-old woman comes to your office for a routine visit. She had her regular screening mammogram last week and wants to review the report with you…

The breasts are heterogeneously dense bilaterally. Normal bilateral mammogram without findings to suggest malignancy.

- She asks: "I think I saw something on the news about dense breasts and breast cancer…should I be worried?"

Breast Density



39yo woman 69yo woman

Image from Dr. Kathy Cho. NIH Radiology.
https://visualsonline.cancer.gov/details.cfm?imageid=2699

Breast Density

- Breast cancer advocates in many states have lobbied for patient notification about increased breast density because…
  - It is a marker of increased risk
  - The sensitivity of mammograms is decreased
- 40% of women ages 40 to 74 have dense breasts
- What to do with this information remains uncertain
- Tomosynthesis (3-D mammography) and ultrasound have been suggested as additional imaging for these patients, with very little supportive data

Dolan & Goel. *Ann Int Med* 2015;162:729-30.

Supplemental Imaging for Dense Breasts: In the News

Sprague BL, et al. Benefits, harms and cost-effectiveness of supplemental ultrasonography screening for women with dense breasts. *Ann Intern Med* 2015.

Friedewald SM, et al. Breast cancer screening using tomosynthesis in combination with digital mammography. *JAMA* 2014.

Supplemental Imaging In the News: Conclusions

Adding ultrasonography to screening mammography in women with dense breasts was associated with minimal benefit and substantially increased costs

Adding tomosynthesis (3D mammography) to digital mammography was associated with a decrease in recall rate and an increase in cancer detection rate

Breast Density Summary

It remains unclear what to do as additional screening for women with dense breasts

Ultrasonography appears to have limited benefits for substantial costs

Tomosynthesis (3-D Mammography) may offer a promising alternative as a follow up for women identified with dense breasts on screening mammography

USPSTF 2015 Draft Guidelines for Breast Cancer Screening

	2009 (current)	2015 DRAFT
Screening in women with radiographically dense breasts		Insufficient to assess adjunctive screening for breast cancer using breast ultrasound, MRI, tomosynthesis, or other modalities in women identified to have dense breasts on mammogram

Back to the Case…. "I think I saw something on the news about dense breasts and breast cancer…should I be worried?"

- Breast density alone would not change screening decisions at this point
- Estimate *Breast Cancer Risk* using BCBS model (incorporates breast density)
- Periodically re-assess risk based on changes in personal and family history
- Consider addition of tomosynthesis if available for women with dense breasts

Other Imaging Modalities

Ultrasound

- Not for screening
- Diagnostic imaging alone or in conjunction with diagnostic mammogram
- Guide for core biopsies
- Pregnant/lactating women

MRI

- Screening in conjunction with mammogram for high-risk patients (>20% lifetime risk, chest irradiation, BRCA mutation)
- Breast implants
- Some new cancer diagnoses

Case 4: Becky

Becky, a 29-year-old female, G0P0, calls the clinic to report she thinks she has a lump in her right breast.

Nursing Role in Breast Care

- Clarify/Triage
- Rule out urgent issues
- Ask questions to identify problem
- Identify needed follow-up
- Follow local protocol
- Provide support and education

Clarifying Questions

- Mass?
- Pain?
- Skin changes?
- Nipple discharge?
- Increased risk due to family history?
- Increased risk due to personal history?

Becky: Office Visit

Becky has no history of breast masses. She reports cyclical breast pain. Her maternal aunt had postmenopausal breast cancer.

There is an 1x1.5 cm nodule at 11:00 in her right breast, 5 cm from the nipple, that is slightly tender, mobile, and firm.

Breast Mass Characteristics

Benign
- Soft, firm, or cystic
- Regular borders
- Mobile

Malignant
- Solitary
- Hard
- Immobile
- Irregular borders
- ≥ 2 cm in size

Case 4: Becky's Differential

- Cyst
- Fibroadenoma
- Fibrocystic changes
- Other

Cysts

- Common in perimenopause
- Vary with menstrual cycle
- Tender, smooth, firm, mobile, round, well-circumscribed fluid-filled sacs
- US women < 30 or pregnant
  US + mammogram women > 30
- Simple cyst = fluid only
  Complex cyst = fluid and solids
- Refer; simple cysts may resolve with aspiration

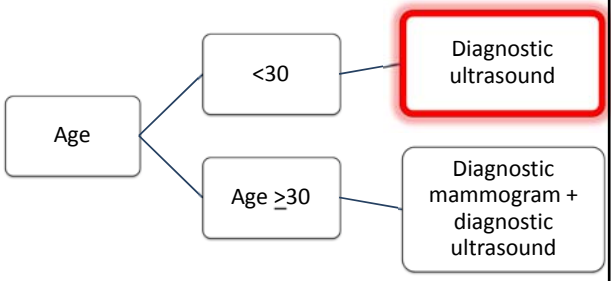
Fibroadenomas

- Most common solid benign tumor
- Stimulated by hormonal changes
- Young women and African-American women
- Firm, rubbery, well-circumscribed, mobile, non-tender
- Diagnosed by biopsy; remove if symptomatic

Fibrocystic Changes

- Normal finding
- Women ages 20 - 40
- Rubbery, painful, diffuse, symmetric thickening
- Upper outer quadrants
- Spontaneous resolution 20% of cases
- Treat symptoms: bra, NSAIDs, acetaminophen

Diagnostic Imaging Algorithm



American College of Radiology. 2012.

Case 4: Becky (continued)

US: no abnormalities

- Likely fibrocystic changes
- Follow-up clinical breast exam in 4-6 wks
  - If residual mass, refer to breast specialist

What about her breast pain?

Strategies to Address Breast Pain

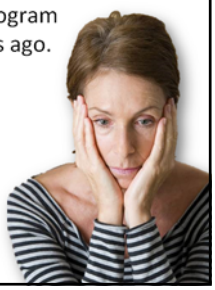
- Associated with normal menses, hormonal meds
- Cyclical
- Bilateral and diffuse
- Treat symptoms

Educate Patients About Breast Pain

Be Aware	Management
• Breast changes	• Bra • Nicotine and caffeine • Heat, cold, massage • OTC medications

Case 5: Rosie

Rosie, a 57-year-old female, presents with a new right breast lump noticed one week prior. No history of trauma to the breast. No history of masses. Normal mammogram 6 mos ago; normal breast exam 9 mos ago.

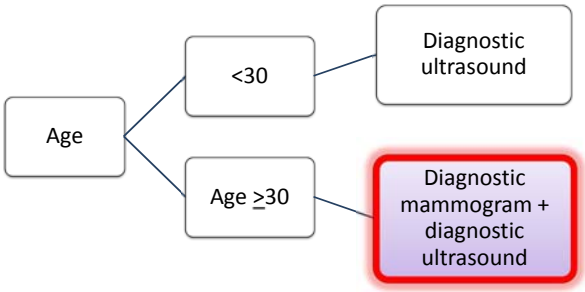


- G2P0, post menopausal
- Family hx:
  - pos for ovarian ca (sister)
  - neg for breast ca
  - neg for colon ca

Case 5: Rosie (continued)

- Exam: mobile, minimally tender, smooth, 1 cm mass at 3:00; 2 cm from nipple in right breast
- No axillary adenopathy bilaterally

Next Steps….



American College of Radiology. 2012.

Case 5: Rosie's Test Results

Mammogram

New round 1.1 cm mass

BIRADS 4

Ultrasound

Irregularly marginated hypoechoic solid mass

Breast Imaging Reporting & Data System (BI-RADS)

Category	Diagnosis
0	Incomplete
1	Negative
2	Benign
3	Probably benign
4a 4b 4c	Cancer 2-9% Cancer 10-49% Cancer 50-94%
5	Highly suggestive
6	Proven cancer

- Rates breast density, masses, calcifications, and architectural distortions
- Notes axillary adenopathy, skin or nipple retraction, skin thickening

Technique to biopsy mass depends on:

- Palpable?
- Location?

- Fine needle aspiration
- Core needle biopsy
- Radiology-assisted biopsy
- Stereotactic biopsy
- Ultrasound-guided biopsy
- Wire-localized biopsy
- Excisional biopsy

Case 5: Rosie (cont'd)

Patient was referred for core needle biopsy

Potential Result	Next Step
Cancer	Refer for definitive therapy
Negative for cancer	Refer to breast specialist or surgeon
Lobular neoplasia, atypical ductal hyperplasia, phylloides tumor, lobular carcinoma in situ, papillary lesions	Refer to breast specialist or surgeon for open biopsy

Case 5: Version 2

What if Rosie's mammogram and ultrasound were "negative?"	
Specific benign finding (e.g., simple cyst)	No further evaluation
Negative (BI-RADS 1)	Clinical evaluation by a surgeon
Mass with probably benign features (BI-RADS 3)	Short-term follow-up vs. core needle biopsy
Take-home point: NEVER ignore a palpable mass!	

American College of Radiology. 2012.

Case 6: Jenny

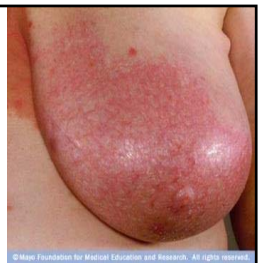
Jenny is a 32-year-old G1P1 Veteran, 3 weeks post-partum. She presents with a painful left breast. She is breastfeeding.

Her exam reveals an engorged breast, very tender, warm, and erythematous. One 4x4 cm area is very hard. There is minimal milk discharge from the nipple.

Causes of Breast Masses in Pregnant or Lactating Women

- Lactating adenoma
- Plugged ducts
- Galactocele
- Mastitis
- Abscess
- Cancer
- Other causes noted previously

Mastitis



- Lactational most common type
- Hard, red, tender, swollen area
- Fever >101°, sick appearance
- Urgent provider evaluation
- Ibuprofen, cold compresses, breastfeeding, antibiotics
- No improvement 48-72 hour, rule out abscess with US

Evaluating Masses in Pregnant and Lactating Women

- Ultrasound is preferred
- Biopsy complications: inaccuracy, hematoma, infection
- If indicated, workup should not be postponed for pregnancy
- Some leaking/expression of fluid during late pregnancy is common

Case 6: Jenny (continued)

Investigate if:

1. Mass persists >2-4 weeks
   - US, mammogram, biopsy if needed
2. Mastitis recurs in same area or does not respond to antibiotics

Summary

- Biennial mammography is the recommended breast cancer screening method in women ages 50-74
- Breast cancer risk assessment is an important role of the primary care provider
- It remains unclear what to do as additional screening for women with dense breasts
- No physical exam can reliably distinguish benign vs. malignant
- Nursing plays a key role to clarify issues, provide education, and facilitate screening and diagnosis

Authors

Deborah DiNardo, MD
VA Pittsburgh Health Care System, Pittsburgh, PA

Ellen Yee, MD, MPH
New Mexico VAHCS, Albuquerque, NM

Rachel Bonnema, MD, MS
VA Nebraska-Western Iowa HCS, Omaha, NE

Contributors:

Linda Baier Manwell, MS
UW General Internal Medicine, Madison, WI

Karen M. Goldstein, MD, MPSH
Durham VAMC, Durham, NC

Gynecologic Emergencies in Office Primary Care

VETERANS HEALTH ADMINISTRATION

WOMEN VETERANS HEALTH CARE EDUCATION & TRAINING

Top 5 Surgical Emergencies

10-yr review at a metropolitan women's hospital (n=3772)

1. Ectopic pregnancy
2. Corpus luteum accident
3. Pelvic infection
4. Appendicitis
5. Adnexal torsion

Hibbard LT. *Am J Obstet Gynecol* 1985.

Primary Care Office

Potential GYN Emergencies

Acute Vaginal Bleeding

- Early pregnancy bleeding
- Non-pregnant acute abnormal uterine bleeding (AUB)

Acute Pelvic Pain

- Ovarian cyst hemorrhage and/or rupture
- Ovarian/adnexal torsion
- Pelvic inflammatory disease (PID)
- Tubo-ovarian abscess (TOA)
- Leiomyomas

Objectives

- Identify high risk presentations of vaginal bleeding and/or acute pelvic pain
- Discuss diagnosis and outpatient management of hemodynamically stable acute AUB
- Discuss ovarian cyst accidents (hemorrhage, rupture, torsion) and indications for consultation
- Discuss diagnosis of PID/TOA, management, and indications for consultation and hospitalization

Approach to Vaginal Bleeding and/or Acute Abdominal-Pelvic Pain

1. Assess Acuity and Risk
2. Determine Pregnancy Status
3. Determine Etiology/Treatment
4. Early GYN Consultation

High Acuity and Risk Presentations

EMERGENCY

- **Hemodynamic instability and/or acute abdomen** – *transfer immediately*
- **Heavy bleeding and/or acute pain** – *anticipate need for expedited diagnostics and emergent interventions*
- **Pregnancy** – *even light bleeding at any gestational age can be life-threatening*

Case 1
Melinda

28-year-old female Veteran with vaginal bleeding and cramping

GYN Emergencies
Assessing high acuity and risk

Hemodynamic assessment

- *Identify signs and/or symptoms of instability*
- *Anticipate change in hemodynamic status*
- *Initiate stabilization*

Pregnancy determination

- *Pregnancy-associated vaginal bleeding and/or pain may be life-threatening*

GYN Emergencies
Early Pregnancy Status Determination

Test	Speed	Sensitivity
POC testing Fastest, sensitive	~5 min	~25mIU/mL
STAT urine qualitative (lab) Fast, sensitive	~20-30 min	~25mIU/mL
STAT serum qualitative (lab) Fast, sensitive	~30-60 min	~5-25mIU/mL
STAT serum quantitative (lab) Most sensitive, gives hCG level	~1-2 hrs	≤5mIU/mL

All women of reproductive potential require pregnancy testing

GYN Emergencies:
History of Present Illness

Acute bleeding: *assess amount and duration of flow*

- *Interval for changing products ≤ 1-2 hours; clots > 1 inch*
- *Duration > 8 days*
- *Dizzy, light-headed, syncope, exercise intolerance, fatigue*

Acute pain

- *Onset, duration, character, location, intensity, radiation, changes over time, alleviating/aggravating factors, trauma*

Warner et al. *Am J Obstet Gynecol* 2004; Fraser et al. *Semin Reprod Med* 2011.

GYN Emergencies: Targeted History

- Medical History
- Surgical History
- OB/GYN History
- Sexual and Menstrual History

GYN Emergencies: Focused Physical Exam

Vital Signs; Abdominal Exam

- Distention, rigidity, tenderness, rebound, mass

All women with new vaginal bleeding/pelvic pain require a pelvic exam (except: e.g. placenta previa, theca lutein cysts)

- Traumatic injuries
- Lower tract infection/inflammation
- Clots, products of conception, protruding masses
- Cervix open or closed, cervical motion tenderness
- Uterine size, shape, mobility, tenderness
- Adnexal tenderness, fullness, masses

Melinda's pregnancy test is POSITIVE

Now What?

Early Pregnancy Bleeding

Epidemiology/Etiology

Common in 1st trimester	• ~40% of all pregnancies have bleeding • Of those, 50% will miscarry (80% <12 weeks)
4 etiologies	1) Ectopic pregnancy 2) Miscarriage 3) Genital tract pathology 4) Implantation

Katz VL. Comprehensive Gynecology, 5th ed., 2007.

Ectopic Pregnancy: Epidemiology

1-2% of reported pregnancies

3-4% of all pregnancy-related deaths

Leading cause of 1st trimester maternal death

ACOG practice bulletin no. 94, 2008; Hoover et al. *Obstet Gynecol* 2010; Berg et al. *Obstet Gynecol* 2010.

Ectopic Pregnancy: Risk Factors

- Prior ectopic pregnancy
- Prior tubal surgery or sterilization
- Prior pelvic inflammatory disease (PID)
- Current intra-uterine device (IUD)
- Current infertility treatment

Up to 50% will have no risk factors

Della-Giustina & Denny. *Emerg Med Clin N Am* 2003; Ramakrishnan & Scheid. *J Fam Pract* 2006.

Ectopic Pregnancy: Clinical Presentation

- **< 50% have classic triad**
  - abdominal pain, delayed menses, vaginal bleeding
- **Nearly 50% have no risk factors**
- **Almost 50% are missed on initial visit**
- **Must rule out ectopic** for **ALL** newly diagnosed pregnant women with abdominal pain and/or bleeding

Nadel &Talbot-stern. *Emerg Med Clin N Am* 1997; Ramakrishnan & Scheid. *J Fam Pract* 2006.

Vaginal Bleeding in Early Pregnancy

Evaluation

History and physical

Quantitative hCG Level

Transvaginal pelvic ultrasound

Vaginal Bleeding in Early Pregnancy

Essential Diagnostic Tests

Laboratory

- Quantitative hCG Level
- Complete blood count
- Complete metabolic profile
- Coagulation panel

Radiology

- Transvaginal ultrasound

Blood Bank

- Type & cross
  - *with Rh-factor determination*

Case 2
Becky

- **CC:** Heavy vaginal bleeding
- **Vitals:** P=90; BP=105/60; RR=14; Pain=2/10; **Afebrile**
- **LMP:** Current?
- **POC Pregnancy Test:** Neg

Don't be falsely reassured by Becky's normal appearing vital signs

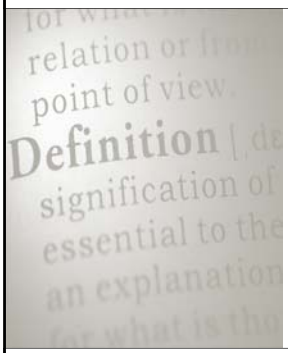
Maintain a high index of suspicion for a change in hemodynamic status throughout the evaluation

Stages of Shock

Class	Heart Rate	Blood Pressure	Mental Status	Blood Loss
Class I	<100	Normal	Slightly Anxious	<15%
Class II	>100	Normal	Mildly Anxious	15-30%
Class III	<120	Decreased	Confused	30-40%
Class IV	>140	Decreased	Lethargic	>40%

American College of Surgeons, Committee on Trauma. *Advanced Trauma Life Support Program for Doctors: ATLS,* 1997.

Acute Abnormal Uterine Bleeding



An episode of heavy bleeding that requires immediate intervention to prevent future blood loss.

Fraser et al. *Semin Reprod Med* 2011.

Acute AUB Evaluation

Non-Pregnant, Hemodynamically Stable Patient

Key factors for work-up	• Age • Medical/menstrual hx • Physical & pelvic exam • Previous labs • Risk factors for endometrial pathology
Consider pelvic US	Assesses structural abnormalities
Endometrial tissue sampling *required* in women ≥45 y/o	**Consider for younger women if:** • Endometrial CA risk (e.g. obesity, PCOS) • Failed medical management

Evaluation of Acute AUB: Lab Testing

Key initial tests	Pregnancy, CBC, PT/PTT (discretionary: fibrinogen, blood T&S)
Tests to consider	Chlamydia/GC, thyroid and liver function tests, iron studies
Von Willebrand testing	VWF antigen, ristocetin co-factor assay, factor VIII, fibrinogen

- No signs/symptoms of infection; negative coagulopathy screen
- **Exam:**
  Moderate blood flow from cervical os; uterus nontender, slightly enlarged and globular; adnexa nontender/no masses
- **Labs:**
  Pregnancy negative; Hgb 9.8 gm/dL; PT/PTT & platelets wnl; TSH pending
- **Imaging:**
  Transvaginal ultrasound pending

Case 2: Becky

(cont'd)

Most Common Causes of Acute Bleeding in Non-Pregnant Patient

- Acute severe menorrhagia
- Genital trauma
- Gynecologic infection
- Foreign body (tampon, IUD)
- Drugs (anticoagulants, hormones)
- Coagulation disorder
- Gynecologic cancers

Management of Acute AUB

- Clinical stability
- Overall acuity
- Suspected etiology
- Future fertility wishes
- Medical co-morbidities

Acute AUB Treatment Options

Emergent	***Urgent***
Medical Inpatient (IV Management) • Transfusion • Estrogen • Antifibrinolytics **Surgical intervention**	**Medical Outpatient** (Oral Management) • Hormonal regimens • Antifibrinolytics • NSAIDs • Iron replacement

Acute AUB Oral Hormonal Regimens
(off-label use common)

Multiple different regimens reported effective

- *Regional & anecdotal provider preferences common*

Most popular:
Combination Oral Contraceptives (COCs)
versus
Progestin Monotherapy

Acute AUB Oral Hormonal Regimens
RCT comparing multi-dosed COC *vs.* MPA

COC and MPA = ***equal efficacy***; similar side effects

- *3 days median time to stop bleeding*

MPA group = higher satisfaction

- 81% would use MPA again (*vs.* 69% in COC group)

CDC's *U.S. Medical Eligibility Criteria for Contraceptive Use* **may be helpful to guide appropriateness of treatment**

Acute AUB Oral Non-Hormonal Regimens
Antifibrinolytics (off-label, not FDA-approved)

Tranexamic acid	• 1.3gm • 1 pill by mouth 3x/day for 5 days

FDA: *approved for heavy menstrual bleeding*

- 40% decrease in menstrual blood loss
- Contraindications similar to those for OCPs
- Not for women on estrogen/hx venous thromboembolism
- Comparatively expensive

Lukes et al. *Obstet Gynecol,* 2010.

Acute AUB Oral Non-Hormonal Regimens
NSAIDs (off-label, not FDA-approved)

Mefenamic acid, naproxen, Ibuprofen most often used

- 5-7 days continuous dosing schedule; begin before or at start of menses; benefit unclear if started later

20-30% decrease in menstrual blood loss

- Reduces prostaglandin levels; may relieve cramping

Contraindications

- Gastritis, bleeding disorders, renal dysfunction

Lethaby et al. Cochrane Database Syst Rev. 2013.

Management of Acute AUB: Summary

Assess acuity/risk and rule out pregnancy

Medical management is initial therapy for most

Progestin-only appears equivalent to comb OCPs

Consult OB/GYN early

Case 3
Jessica

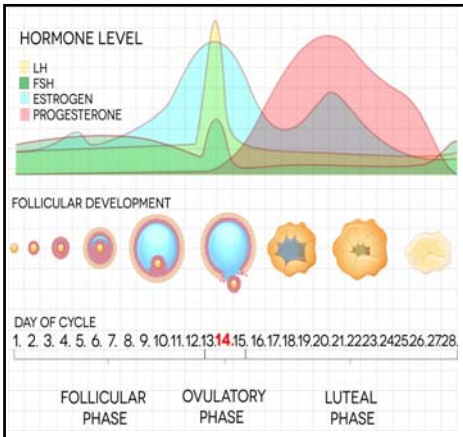
- **CC:** Acute pelvic pain
- **Vitals:** P=85; BP=120/60; RR=12; Pain=6/10; Afebrile
- **LMP:** 3 weeks ago
- **POC Pregnancy Test:** Neg

Adnexal Mass: Etiology

- **Non-GYN** (e.g. pelvic, kidney, diverticular, appendiceal)
- Uterine source (e.g. anomaly, leiomyoma)
- Fallopian tube (benign, malignant, infectious, ectopic)
- Ovarian neoplasm (benign vs. malignant)
- Functional ovarian cyst (benign)

Most common adnexal mass is a functional ovarian cyst

Berek JS, 2007; Katz VL, 2007; Lawrence LL, 2003; Bottomly & Bourne, 2009.



Functional Ovarian Cysts

Cystic follicle > Corpus luteum

Functional Ovarian Cysts
Follicular Cyst

Thin walled, simple (unilocular) ▪ At ovulation ~2-2.5cm	***Silent rupture common*** ▪ Occasionally symptomatic and/or hemorrhagic	Expectant management ▪ Resolution 4-8wks

Berek JS, 2007; Katz VL, 2007; Lawrence LL, *Obstet Gynecol Emerg* 2003.

Functional Ovarian Cysts
Corpus Luteum Cyst

Dominant ovulatory follicle becomes corpus luteum ▪ If cystic, average size 3-5cm ▪ May be as large as 10-15cm	***Commonly hemorrhage and/or rupture*** ▪ Occurs cycle day 20-26 • R>L (2:1)

Bottomly & Bourne, 2011; Hallat, 1984; Berek, 2007; Katz 2007.

Functional Ovarian Cysts
Theca Lutein Cyst

Excessive gonadotropic or hCG stimulation ▪ Ovulation induction or molar pregnancy	Usually bilateral, multi-cystic, and fragile ▪ May be up to 30cm	Expectant management ▪ Spontaneous regression	***Rupture can be life-threatening***

Berek JS. *Berek & Novak's Gynecology* 14th ed, 2007; Katz VL. *Comprehensive Gynecology* 5th ed, 2007.

Functional Ovarian Cysts

Do *NOT* cause acute pelvic pain unless…

- **Distending**
- **Twisting**
- **Leaking**
- **Ruptured**
- **Infected**

Hemorrhagic, Leaking or Ruptured Ovarian Cyst
Presentation

- **Sudden, unilateral acute pelvic pain**
  - Associated w/ trauma/exertion (coitus, exercise, valsalva)
  - Light vaginal bleeding is not uncommon
  - Progression to generalized pain suggests active bleeding
- **Menstrual hx often helpful**
- **Right seen more frequently than left (2:1)**

Hallat. *Am J Obstet Gynecol* 1984; Lawrence. *Obstet Gynecol Emerg* 2003.

Hemorrhagic, Leaking or Ruptured Ovarian Cyst
Differential Diagnosis

Ectopic Pregnancy	Ovarian Torsion	Appendicitis or Diverticulitis
Pelvic Inflammatory Disease (PID)	Tubo-Ovarian Abscess (TOA)	Leiomyoma-related Symptoms
	Ruptured Ovarian Neoplasm	

Hemorrhagic, Leaking or Ruptured Ovarian Cyst
Recommended Labs and Imaging

Pregnancy testing	CBC, PT/PTT	Blood type and screen (if indicated)
Urinalysis, STI, vaginitis testing (if indicated)	***Pelvic US is cornerstone of evaluation***	

Hemorrhagic, Leaking or Ruptured Ovarian Cyst
Management

- **Early exclusion of ectopic pregnancy**
  - GYN collaboration expectant *vs.* surgical management
- **Hospitalize if**: unstable, acute abdomen, possible ongoing bleeding, infection, or uncertain diagnosis
- **Uncomplicated hemorrhagic or ruptured cysts can be expectantly managed as outpatient**

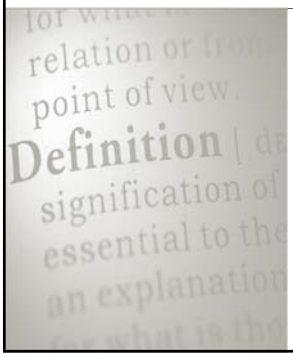
Hemorrhagic or Ruptured Cyst
Expectant Outpatient Management

- **Precautions = *pain, infection, bleeding***
  - Pain control with oral analgesics
  - Pelvic rest and reduced activity
- **Recurrence risk w/coagulopathy = 31%**
  - Consider ovarian suppression (oral contraceptives)
- **Follow-up: repeat pelvic ultrasound in ~6wks**

Case 4
Jenny

- **CC:** Acute pelvic pain
- **Vitals:** P=105; BP=120/80; RR=12; Pain=5/10; T=101°F
- **LMP:** 1 week ago
- **POC Pregnancy Test:** Neg

Pelvic Inflammatory Disease (PID)
CDC, 2010



*Spectrum of inflammatory disorders of the **upper genital tract** including:*

- *endometritis*
- *salpingitis*
- *tubo-ovarian abscess*
- *pelvic peritonitis*

PID: Epidemiology

Most common serious infection in sexually active young women (age: 16-25yrs)

~1 million U.S. women each year

Annual cost > $4.2 billion

Subclinical PID emerging as common entity

CDC. *2010 STD Treatment Guidelines*; CDC. *Self-Study STD Modules for Clinicians-Pelvic Inflammatory Disease (PID),* 2014

Pelvic Inflammatory Disease (PID)
Risk Factors

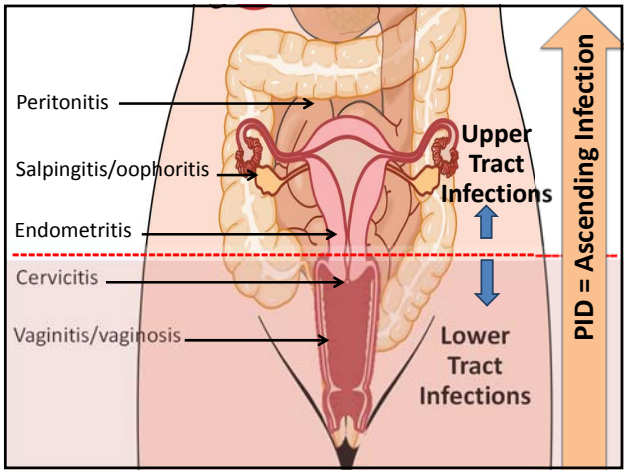
Young age	Multiple sexual partners	Prior PID
Current (or hx of) Gonorrhea (GC) or Chlamydia	Failure to use barrier contraception	Current douching

CDC, *2010 STD Treatment Guidelines*; Sweet & Gibbs, 2009; CDC, *Self-Study STD Modules for Clinicians-Pelvic Inflammatory Disease (PID),* 2014

Pelvic Inflammatory Disease (PID)
Etiology

- **Ascending infection from lower genital tract**
  - Polymicrobial due to both aerobic/anaerobic flora
- **Considered an STI**
  - 25-75% Gonorrhea/Chlamydia combination present
- **Broad spectrum antibiotic coverage necessary**

CDC. 2010 STD Treatment Guidelines; Sweet & Gibbs. *Infectious Diseases of the Female Genital Tract*, 2009; Soper DE. *Obstet Gynecol* 2010.



PID & Current Intra-Uterine Devices (IUDs)

- No independent risk after 3 weeks post-IUD insertion
- Insufficient evidence for IUD removal in setting of acute PID

IUDs left in place during episode of acute PID warrant caution and close follow-up

CDC, 2010 STD Treatment Guidelines.

Pelvic Inflammatory Disease (PID)
Complications and Sequelae

TREAT EARLY! Correlation: delay in treatment with severity of disease and complications/sequelae

Short-Term Complications:	**Long-Term Sequelae:**
Fitz-Hugh Curtis Syndrome, TOA, sepsis, death	Chronic pelvic pain, infertility, ectopic pregnancy

PID Complications
Fitz-Hugh Curtis Syndrome

Continued ascent of infection, *now involving peri-hepatic inflammation*	Higher prevalence of moderate to severe adhesions and consequent long-term sequelae
▪ Right upper quadrant and pleuritic pain w/elevated LFTs ▪ 5-10% will develop syndrome	

PID Complications
Tubo-Ovarian Abscess (TOA)

Signs	**Exam**	***Potential life-threat***
▪ May *NOT* have fever or leukocytosis	▪ Fixed, tender mass ▪ If uncertainty on bimanual exam, get US	▪ Hospitalize; start parenteral antibiotics early ***Rule out at initial evaluation and if patient departs from expected course of improvement***

PID Complications
Tubo-Ovarian Abscess (TOA)

Surgical GYN Consult	Unruptured: initial tx = parenteral antibiotics ▪ ~75% respond, even with mass up to 8cm ▪ Long-term f/up to assure resolution	***Rupture is life-threatening*** (5-10% mortality) ▪ Septic shock → multi-organ system failure → death

PID Sequela
Infertility, Ectopic, and Chronic Pelvic Pain

Inflammatory reaction causes significant tubal damage and adhesions ▪ tubal factor infertility ▪ risk of ectopic pregnancy ▪ chronic pelvic pain	Infertility > doubles per episode ▪ 1st = 8% ▪ 2nd = 20% ▪ 3rd = 50%	▪ 6-10x ectopic rate ▪ 4x chronic pelvic pain (up to ~1/3rd of cases!)

Pelvic Inflammatory Disease (PID)
Diagnostic Considerations

Wide variation in symptoms and signs

- No historical, physical, or lab finding is **both** *sensitive* **and** *specific* for acute diagnosis

In one study, only 20% confirmed salpingitis had classic constellation of symptoms

- Pelvic pain
- Cervical motion or adnexal tenderness
- Fever and leukocytosis

PID Diagnosis: CDC Criteria to Initiate Empiric Treatment

Sexually active young women with lower abdominal/pelvic pain
PLUS at least 1 of the following;

- Cervical motion tenderness
- Uterine tenderness
- Adnexal tenderness

CDC, *2010 STD Treatment Guidelines*.

PID Diagnosis: CDC Criteria

Additional criteria to enhance *specificity*:

- Fever > 101 F
- Mucopurulent cervical or vaginal discharge
- Abundant WBCs on wet prep
- Elevated erythrocyte sedimentation rate (ESR)
- Elevated C-reactive protein (CRP)
- Gonorrhea or Chlamydia infection (lab documented)

CDC, *2010 STD Treatment Guidelines*.

PID Diagnosis: Enhancing Specificity

If cervical discharge appears ***normal*** *(no WBCs on wet prep):*

- diagnosis of PID is unlikely
- alternate diagnoses should be considered

CDC, *2010 STD Treatment Guidelines*.

PID Treatment

Many women can be safely treated as outpatients

Criteria for hospitalization

- Tubo-ovarian abscess
- Pregnancy (rare)
- Failure to respond to oral antibiotics within 72 hours
- Unable to tolerate oral antibiotics *or* follow outpatient regimen (e.g., f/up visit)
- Uncertain diagnosis (esp. appendicitis)

PID Inpatient Treatment Recommendation

- **Broad spectrum parenteral antibiotic coverage**
  – follow CDC guidelines
- **GYN consultation/collaboration**
- **At least 24 hours direct observation**
- Management of sex partners, education on prevention of future STIs, close follow-up

CDC, *Self-Study STD Modules for Clinicians-PID.* Updated Oct, 2014.

PID Outpatient Treatment Regimens

Ceftriaxone (IM) **+** **Doxycycline (PO)** *+/-* *Metronidazole (PO)*	**Cefoxitin (IM)** **+** **Probenicid (PO)** **+** **Doxycycline (PO)** *+/-* *Metronidazole (PO)*

CDC, *Self-Study STD Modules for Clinicians-PID.* Updated Oct, 2014.

PID Patient Education/Instructions

- Precautions for worsening
- Offer HIV testing
- Retest GC/CT in 3-6 months
- ***REQUIRED:*** evaluate treatment response in 48-72 hrs
- Encourage notification of all sex partners (within 60 days prior to onset)
- Empirically treat partners for GC/Chlamydia
- Abstinence until treatment is complete for both patient and current partners

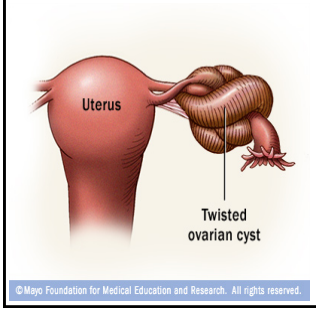
PID and Prevention

- **Advocate safe sex practices**
- **GC/Chlamydia screening**
  - annually for sexually active women < 26yo
  - other women at risk
- **Avoid douching**
- **? treat bacterial vaginosis**

Case 5
Rosie

- **CC:** Acute pelvic pain
- **Vitals:** P=100; BP=130/90; RR=12; Pain=5/10; T=98°F
- **LMP:** 2 weeks ago
- **Contraception:** Tubal ligation

Torsion of Adnexa



Definition…

Rotation of the ovary and/or tube around its ligamentous support and vascular pedicle

Torsion of Adnexa: Epidemiology

- Commonly occurs late 20s to mid 30s
- 10-20% present in pregnancy (CL cyst)
- Right > Left (3:2), sigmoid colon may be protective

Hibbard LT. *Am J Obstet Gynecol* 1985; Katz VL. *Comprehensive Gynecology* 5th ed. 2007; Growdon & Laufer. *UpToDate* March 2014.

Torsion of Adnexa: Pathophysiology

Ovarian masses cause change in weight and polarity

(5-12 cm highest risk)

- Physiologic cysts - 48%
- Neoplasms - 46%
- Normal adnexa - 6%

Growden & Laufer. *UpToDate* March 2014; Lawrence LL. *Obstet and Gynecol Emerg* 2003.

Torsion of Adnexa: Presentation

Clinical Manifestations	Considerations/ Caveats
• **Unilateral pelvic pain** - sudden onset - sharp and stabbing - intermittent or colicky • **Common:** - waves of nausea/vomiting - radiation flank/groin/leg	• **Hx of previous less painful episodes = partial torsion and spontaneous reversal** • **Often confused for:** - appendicitis - nephrolithiasis - intestinal obstruction

Torsion of Adnexa: Presentation

Clinical Manifestations	Considerations/Caveats
• **Tender pelvic mass on abdominal/pelvic exam** • *Characteristic:* ***Adnexal mass w/pain plus absent ovarian vessel flow on doppler*** • Mild fever/leukocytosis, if present	• **DDx:** ectopic, hemorrhagic cyst, PID/TOA, appendicitis, myoma-related symptoms • **>50% have normal vessel flow on doppler studies** • High fever and leukocytosis suggests other infectious etiology

Torsion of Adnexa: Diagnosis/Management

- **Diagnosis is primarily clinical**
  - Pain with unilateral adnexal mass
  - Pelvic ultrasound is cornerstone of evaluation
- ***Potential threat to future fertility***
  - Early GYN consultation
- **Surgical management with detorsion and conservation of adnexa is urgent**

Uterine Leiomyomas Epidemiology

Leiomyoma = myoma = fibroid = fibromyoma

- Benign smooth muscle tumor of myometrium
  - Risk of sarcoma 2-3/1000
- Overall, most frequent tumor in women
- Largest indication for hysterectomies in U.S.

Uterine Leiomyomas: Prevalence

- Age/ethnicity dependent
- Population-based ultrasound screen, by age 50:
  - >80% African American / ~70% Caucasian women
  - Hispanic/Asian rates similar to Caucasian
  - All groups demonstrate familial tendencies
- < 50% of women symptomatic

ACOG pract bull no. 96, 2008; Katz VL. *Comprehensive Gynecology 5th ed.* 2007.

Uterine Leiomyomas: Presentation

Symptoms

- AUB, pain, pressure or heaviness

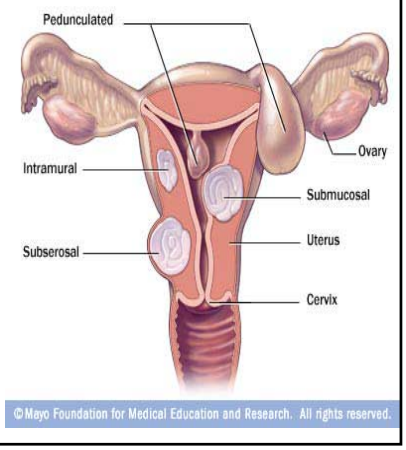
Symptoms & treatment depend on size, number, location. Considered significant if:

- **Size:** single myoma ≥4cm
- **Number:** total size >8-9wks gestation (softball)
- **Location:** submucosal (any size)

Uterine Leiomyomas

Classification

- Submucosal
- Intramural
- Subserosal



Uterine Leiomyomas

Acute Pain (uncommon, but severe)

Degeneration = ***outgrows blood supply***
Torsion = ***pedunculated myoma twists its vascular pedicle***

Presentation is similar:

- Severe colic; may progress to constant pain
- Uterine tenderness, enlarged/irregular uterine contour
- Fever & leukocytosis mild unless infected

Treatment:

- GYN collaboration on observation with NSAIDs *vs.* surgery

Uterine Leiomyomas

Acute Pain (uncommon, but severe)

Prolapse = *submucosal myoma expelled through cervix*

Presentation:

- Severe colic, labor-like pain; may have significant bleeding
- Uterine tenderness with mass prolapsing through cervix

Treatment:

- Assure hemodynamic stability, pain control, consult GYN for surgical intervention

Gynecologic Emergencies in Office Primary Care

This presentation is an ***overview of common causes of acute bleeding and pelvic pain*** that may present to your practice.

It is not intended to be a comprehensive review.

With the exception of cursory comments on early pregnancy bleeding, obstetrical causes were not covered.

Authors

Randall Ball, MD, FACOG
Phoenix VA Health Care System
Phoenix, AZ

Amy Stevens, MD, FACOG
North Florida/South Georgia Veterans Health System, Gainesville, FL

Lisa Nocera, MD
New York Harbor VA Healthcare System
Manhattan, NY

Amanda Johnson, MD, FACOG
Cheyenne VA Medical Center
Cheyenne, WY

SUPPLEMENTAL INFO FOR GYNECOLOGIC EMERGENCIES LECTURE

ACUTE ABNORMAL UTERINE BLEEDING ORAL HORMONE REGIMENS (off label)

*2006 RCT comparing multi-dosed Combined Oral Contraceptives Pills (COC) vs Medroxyprogesterone Acetate (MPA) **

COC containing 35mcg ethinyl estradiol and 1 mg norethindrone acetate

- 1 pill by mouth 3x/day for 7 days, then immediate transition to:
- 1 pill by mouth daily for 21 days

OR

MPA 10mg tabs

- 2 pills by mouth 3x/day for 7 days, then immediate transition to:
- 2 pills daily for 21 days

- Equal efficacy: 3 days median time to cessation of bleeding in both groups
- Side effects similar; MPA had higher satisfaction rate

(N=40; sample size too small to prove equivalence or properly assess side effects)

* Munro MG, et al. Oral medroxyprogesterone acetate and combination oral contraceptives for acute bleeding, a randomized controlled trial. Obstet Gynecol 2006;108:924-29.

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*2013 single arm non-comparative trial of progestin monotherapy using MPA***

Depot medroxyprogesterone acetate (DMPA)

- 150mg IM injection x 1 with simultaneous:

PLUS

Oral medroxyprogesterone acetate (10mg tabs)

- 2 pills by mouth 3x/day for 3 days only

- At the end of 3 days, the IM injection provides a fairly steady systemic level, so comparatively, the exposure to high dose progestin was decreased from 7 days in the Munro trial to only 3 days in this trial.
- Median time to cessation of bleeding was 3 days, but ALL 48 Pts stopped bleeding within 5.
- Side effects low with 100% satisfaction.

** Ammerman SR, Nelson AL. A new progestogen-only medical therapy for outpatient management of acute, abnormal uterine bleeding: a pilot study. Am J Obstet Gynecol. 2013;208:499.e1-5.

NSAID REGIMENS (Off Label) FOR USE IN REDUCING HEAVY MENSTRUAL BLEEDING*

Start before or at the beginning of menses. Benefit unclear if started later.

- Mefenamic acid
  - 500 mg TID first 4-5 days of menses
  - 500 mg TID from 4-5 days prior to menses until cessation
  - 500 mg initially, then 200 mg QID for 3-5 days
- Naproxen
  - 500mg at onset and 3-5hrs later, then 500 mg BID x 5 days
  - 500 mg in am and 250 mg in pm for 2 days, then 250 mg BID x 7 days
  - 500 mg, then 250 mg QID x 4 days
  - 550 mg, then 275 mg QID x 5 days
- Ibuprofen
  - 800 mg TID x 5 days

*SOURCE: Lethaby et al. Non-steroidal anti-inflammatory drugs for heavy menstrual bleeding. Cochrane Database Syst Rev 2013 Jan 31;1:CD000400.