Advanced Video Vaginal Microscopy:
Everything You’re Itching to Know!

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Mimi Secor, DNP, FNP-BC, NCMP, FAANP
• FNP for 39 years specializing in Women’s Health
• NP at Just Us Women, N Attleboro, Massachusetts
• DNP 2015, Rocky Mountain University, Provo, Utah
• Lifetime Achievement Award, 2013 from Mass NP Coalition
• Advanced Health Assessment of Women: skills and procedures, coauthor, Springer Publishing, 2014 (AJN Book of the Year)
• Fast Facts about the GYN Exam, coauthor, 2012
• Visiting Scholar - Boston College
• Fellow in AANP
• Owned practice for 12 years in Cambridge, Mass (1984-1995)
• Worked in Bethel, Alaska for 7 years (1992-1999)
Objectives

1. List indications for and describe the optimal procedure for collecting, preparing & reading a wet mount. (Slides 6-44)

2. Discuss New CDC STI Vaginitis Diagnostic Guidelines. (Addendum slides)

3. Explain new Treatment Guidelines for management of vulvovaginitis. (Addendum slides)

- Test - often and early
- Treat - effectively
- Test - of cure, 1 month
NEW National STI Survey
Often Asymptomatic, Underdiagnosed!

19 million new STIs yearly in US
• 50% in young 15-24 years old

• 25% of ALL teens have 1 ≥ STI
• 50% of Black teens have 1 ≥ 1 STI

www.cdc.gov/std/stats

2010 STD Statistics- New National Survey
19 Million NEW STIs yearly = Syndemic

• STIs increasing: synergy risk, increasing in older adults
• Chlamydia: > females
• Gonorrhea: > Men having Sex w Men (MSM)
• Trichomoniasis: > teens 22/100 rate, high in older women too
• Herpes: Increases risk of HIV, highest prevalence
• HPV: highest incidence
• Syphilis: 15% incr. since 2003, 69% increase in women
• HIV: > in MSM (Screen all adults), 50,000 new cases yearly
• Hepatitis C: increasing esp. in older adults, 45-65 years old
  (Screen all adults once)
Clinical Presentations of STIs

1. Often asymptomatic
2. Infections in multiple sites are common
   - Cervix, urethra, vagina, anal, throat
3. Mixed infections common
Vaginitis: Office Diagnostics

- **Vaginal pH**: good screening test (billing code 83986)
  - Sensitive, not specific
  - NEW: VS-Sense Swab Test, rapid acidity test, info@commonsense.com
- **KOH*Amine Whiff test** (billing code 82120)
  - Mix directly with vaginal sample, not saline
- **Vaginal Microscopy** (billing code 87210)
  - Only 60% to 80% accurate
- **Other tests**:
  - Pap, cultures unreliable per CDC 2010
  - Affirm Test: yeast, trich, BV (must clinically correlate!)
  - NEW PCR: One Swab, Multiple Detections (GenPath, MDL, Others)
  - GenPath – Pap w/ HPV, STI, Vaginitis sx, sx

*KOH=potassium hydroxide

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**PCR Testing: Features and Benefits**

**One Collection, Multiple Detections**
- Simplicity of collection with 1 universal liquid vial

**Convenience of Testing**
- Pap, HPV, STIs, Vaginitis results from 1 lab (GenPath)
- STIs vaginitis (MDL)
- One easy-to-read report

**Fast Turn-around Time**
- PCR method is significantly faster than culture

**High Specificity, High Sensitivity**

**Clinically Relevant Profiles**
Vaginal Microscopy Indications

- Diagnosis of Vulvovaginitis
- Follow-up “Test of cure”
- With Pap smears
- With Gyn exams
- Maturation Index
  - To assess hormonal influence

TTT

- **Test**
  - Early and often

- **Treat**
  - Effectively
  - Consider advantages of clindamycin for BV
  - Vaginal therapies

- **Test**
  - Of Cure
  - 1 month post-treatment to verify cure
  - Monitor until maintains cure

Normal Flora

- **Lactobacilli**
  - pH 4.0
  - Estrogen normal
  - < risk STIs

- **Gardnerella**
- **Mobiluncus**
- **Atopobium**
- **Mycoplasmas anaerobes**
How Accurate is Vaginal Microscopy?

- Only 60-80% sensitive
- Key is
  - Quality of sample
  - Skill of viewer

Wet Mount Preparation
Slide Method

2 frosted tipped slides
  - 2 drops saline on front slide
  - 2 drops KOH on back slide
or
1 slide
  - Saline on left
  - KOH on right side (keep separate)
Wet Mount Preparation
Test Tubes

2 test tubes
• 1/2 cc saline in 1 tube
• 1/2 cc KOH in other tube
• Tube holder
• 2 dacron swabs used together

Wet Mount Preparation:
Assemble Supplies

• Prepare pH paper, 1 inch strip
• Saline
• KOH 10 or 20%
• Tubes and/or slides
• Coverslips, 1 or 2 inch

Vaginal pH Testing

• Sensitive
• But NOT Specific
• Proxy for normal estrogen

• Factors influencing pH
  • Sperm
  • Blood
  • Cervical mucus
  • Medications, etc.
Collecting the Sample

- Plastic spatula, or 2 swabs together
- Collect from lateral vaginal wall
  - Or from speculum (blade edges)
- Check vaginal pH
  - Before preparing slides
NEW: Vaginal pH Swab Test ‘VS SENSE’

- by Common Sense Ltd
- Rapid Results: 10 second test for BV and Trichomonas
- 90% accuracy
- CLIA waived
- 25 tests/box: $2.50 per test
- CPT code 83986: $5.13

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<tr>
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Vaginal pH Testing, CPT code 83986

• Nitrazine or phenaphthazine
• pH range 4.0-7.5
• Normal = 4.0-4.5
• BV = > 4.5
• Trich = > 4.5

Vaginal pH Over the Lifespan

Premenarchal girls  
Reproductive aged women with estrogen:  
Lactobacillus predominant  
Lactobacillus reduced or coitus in past 24 hours  
BV  
Menses  
Reproductive aged women breastfeeding  
Post-menopausal and no HRT

Double Slide Holder

• 2 frosted tipped slides
• Saline on the front slide
• KOH on the back slide
Preparing the Sample

• Gently mix in saline, x1-2
  Dilute (slightly opaque)

• Mix in KOH until white, x3-4
  Concentrated (thick, white)

• Check Whiff immediately

Sample Types

• Saline - well prepared
• KOH - well prepared
• Discard poor sample
Repeat Smears

- Save the speculum
- Sample from upper edges
- If still moist
- pH, whiff may be repeated too
Viewing the Smear

- View 12 fields minimum
- Saline and KOH
- 2 to 3 minutes until very proficient
Microscopy Flow Sheet

- Date
- HPI
- LMP
- Vulvo vaginal cervix findings
- Vaginal mucus
- pH
- Whiff (KOH amine test)

Flow Sheet – Saline: Low Power

- Quality of smear
- General impression
Flow Sheet-Saline: High Power

- LB (lactobacilli)  estimate 0-3+
  - Variable length rods are good bacteria

- Bacteria 0-3+
  - Tiny, bad bacteria

- WBCs estimate 0-3+
  1+ ratio of WBCs to epi cells up to 3:1
  2+ ratio of 5:1
  3+ ratio of 10:1 or more
Should I have another kid or two?
White Blood Cells on Wet Mount

3 WBC:1 epithelial cell...is normal

Associated with douching, intercourse, eversion, metaplasia, low estrogen, etc.

5-10:1 ratio......suggests inflammation

> 10:1 ratio......likely inflammation
Atrophic Vaginitis

- Vulva: “Sticky sign”
- Erythema, mottling
- Pallor
- Flattening of rugae
- Leukorrhea variable
- Esp. amount
- May mimic BV, Trich, HSV
- Or other etiologies
Maturation Index - Estrogen Influence

- **Superficial, estrogenized cells** - 95%
  - Large, cuboid, high ratio of cytoplasm to nucleus
  - Ratio 20:1

- **Parabasal, intermediate cells**
  - Medium round, lower ratio cytoplasm to nucleus
  - Ratio 10:1

- **Basal cells, immature, unestrogenized**
  - Small round, low ratio cytoplasm to nucleus
  - Ratio 5:1

Flow Sheet - KOH

- **Wet mount (20% KOH)**
- **Low (gross impression)**
- **High (detail including morphology)**
- **Assessment**
- **Plan**
Advantages of KOH

- Epithelial cells fade
- Yeast forms (hyphae & pseudo hyphae stand out)
- Buds (spores, conidia) still subtle
KOH: Identifying Yeast Forms

- Dissolves epithelial cells (ghost cells)
- Morphology easier to identify
  “Glass beads, circus balloons”
- Phase contrast adds dimension

KOH: Ghost Cells

High Power

Low Power
Identifying Yeast Forms

- Test - often and early
- Treat - effectively
- Test - of cure, 1-2 months
Bacterial Continuum

- Normal, intermediate, abnormal = BV
Differential Diagnosis
Purulent Vaginitis

• Trichomoniasis
• Gonorrhea
• Chlamydia
• HSV
• Cervicitis
• Retained tampon
• Atrophic vaginitis
• Crohn's, Pinworms

• Idiopathic ulcers
• HIV +
• Pemphigus entities
• Cancers
• Lichen planus
• DIV subgroups
• Group A Strept
• Rectovaginal fistula
Differential Diagnosis Pearl

- Compare vaginal to cervical mucus for greater # WBCs
- Indicates source of WBCs

Atrophic Vaginitis

- Vulva- “Sticky sign”
- Erythema, mottling
- Pallor
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Resources & Addendum Slides

- Studies
- Additional supportive content
- Helpful reference material
- http://depts.washington.edu/nnptc/online_training/wet_preps_video.htm
Summary:
• Test
  • often and early
• Treat
  • effectively
• Test - of cure
  • follow-up 1 month

Thank you and Good Luck!

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Artifact
• Note dark, rough edges
• Non tubular quality
• Like a "blade of grass"
Types of Artifact

• Fibers: dark, rough edges, flat, non-segmented
• Hairs: dark edges, ragged ends, non-segmented
• Glove powder: gem-like, dark, +/- EC mimic
• Lipids: variable sized bubbles, 1 ring
• RBCs: all similar size, double ring
• Air bubbles: variable width, dark ring as focus
Addendum Slides

Acute and Chronic Vulvovaginitis: Update 2016

What Really Works?

R. Mimi Secor, DNP, FNP-BC, NCMP, FAANP
Onset, Massachusetts

Disclosure for Mimi Secor, DNP, FNP-BC, FAANP

Speaker:

• Hologic
• Shionogi

3 holes in one !!!

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Vaginitis Objectives

• Discuss NEW 2015 CDC recommended vaginitis treatments focusing on minimizing chronic recurrent infections 15 min
• Explain benefits and risks of various treatment options re: prevention of chronic vaginitis 30 min
• Describe treatment challenges involving recurrent infections and prevention of infections 15 min

New CDC STI Treatment Guidelines:
June, 2015

• MMWR. (June 5, 2015). Sexually Transmitted Diseases Treatment Guidelines, Volume 64 (3).
Genital Herpes Simplex Virus: Key Points

- Most transmission is asymptomatic = 70%
- Atypical symptoms are most common
- HSV increases HIV risk!
- HSV 1 = ~ 50% of Primary genital infections

Genital Herpes Simplex Virus: Key Points

- Culture lesions with PCR (higher sensitivity)
- Serology IgG Type 1, 2, (IgM is NOT type specific)
- Offer episodal and/or suppressive therapy
- Highly stigmatized so Counseling is KEY
- Education
- Condoms help
Vulvitis: Need to Clarify
Vaginal, Cutaneous Yeast, Contact, Allergic, Derm?

Vulvar Symptoms
- Irritants, over cleansing
- Allergens
  - Condom allergy is rare
- Infections
  - Genital Herpes Type 2
- Skin conditions
  - Lichen Simplex Chronicus / LSC
  - Lichen Sclerosis / LS
  - Lichen Planus / LP
  - Other
    - Eczema, atrophy, etc.

Vulvar Irritants, Allergens
- Soaps
- Pads
- Shaving
- Oral sex
- Spermicides
- Lubricants
- Underwear
- Dyes, fragrances
- Soap in undies
- Bubble baths
- Shampoo
- Hot tubs
- OTCs, Scripts
- Preservatives in these
- Over cleansing
- You name it...
Personal or Family History of Skin Sensitivities?

- Fair skin
- Light hair
- Sensitive skin
- Skin conditions
- Family history

- Sensitive vulva

Vulvar Care Guidelines, “Less is More”

- **NO SOAP**: Wash with warm water only
- Soak and Seal
- **Vaseline**, mineral oil, or Crisco to prevent & treat itching
- **Avoid shaving**, thong underwear and douching!
- Wear all cotton, white underwear (wide design)
- Wash underwear in very hot water
- Use ½ laundry soap, double rinse, do NOT hand wash
- Sleep without underwear, wear loose clothing
- Avoid sex if symptoms, pain, infection: for 1 week+
- Non-irritating lubricants: Standard KY, Femglide, Poise, Sliquid, AVOID Astroglide, scented or warming products

Normal Flora of Healthy Vagina
• Test - often and early
• Treat - effectively
• Test - of cure, follow-up

NEW - 2015
VVC: Self Diagnosis per CDC

"Women who have previously been diagnosed with VVC by a clinician are NOT necessarily more likely to be able to diagnose themselves; therefore,
• If symptoms persist after using an OTC Rx or
• If symptoms recur within 2 months after treatment for VVC
• Pt should be clinically evaluated and tested."

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Vaginitis: Office Diagnostics

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  - Mix directly with vaginal sample, not saline
- **Vaginal Microscopy** (billing code 87210)
  - Only 60% to 80% accurate
- **Other tests:**
  - Pap, cultures unreliable per CDC 2014
  - **Affirm Test:** yeast, trich, BV (must clinically correlate!)
  - **NEW PCR:** One Collection, Multiple Detections
    - MDL, GenPath, Quest, Labcorp, etc.

*KOH=potassium hydroxide

**NEW: Vaginal pH Swab Test (VS Sense)**

VVC: What’s NEW?
Vulvovaginal Candidiasis

- Confirm if recurrent
- **C. albicans**, versus Non- **C. albicans**
- **PCR** (3-5 days)
- Non-PCR culturing (up to 2 weeks)
- Butaconazole (Gynazole) single dose
  - Effective against **C. albicans** and non **C. albicans**
Clinical Presentation of VVC: Vulvovaginal Candidiasis

Identifying Yeast Forms

Diagnostic Tests for Chronic VVC

- Wet Mount negative:
- CBC, TSH, Glucose, HIV, etc.

- Fungal culture and speciate!
  - Non PCR: 1 week+ for results
  - PCR: 3-5 days (NEW)

- Unilateral symptoms:
  - Rule out genital herpes
  - HSV Serology IGG for Type 2
Treatment of Uncomplicated VVC: Vaginal Options - Equal Efficacy !!!

**Over-the-counter**
- Clotrimazole (Gyne Lotrimin), 3, 7-14 day cream
- Miconazole (Monistat), 1, 3, 7 day creams, ovules
- Tioconazole (Vagistat 1), single dose ointment

**Prescription**
- Butaconazole (Gynazole), 5 gm single dose cream
  - Bioadhesive, time released, albicans/non-albicans
- Terconazole (Terazol), 3 day ovules, 7 day cream

Butaconazole (Gynazole) single dose: is bioadhesive, time released.....

- Covers C. albicans
- And Non-C. albicans
- Consider if unable to culture
- Or chronic, recurrent sx

Treatment of Uncomplicated VVC: Oral Options- Fluconazole (Diflucan)

- Fluconazole 150 mg orally single dose (Category C)
- **Limited effectiveness** against Non-albicans species
- Delayed symptom relief (~24 hours)
- **Warning May 2016:**
  - Risk of spontaneous abortion, AVOID in pregnancy
- **Defer breast feeding** for 12-24 hours (Cat C)
- **Drug-drug interactions**
Diagnostic Tests for Chronic VVC: Vulvovaginal Candidiasis

- Wet mount negative:

- Fungal culture and speciate:
  - Non-PCR: 1 week+ for results
  - PCR: 3-5 days (NEW)

- Unilateral symptoms:
  - Rule out genital herpes
  - HSV Serology IGG for Type1, 2

Chronic VVC: Rule out

- Diabetes
- Immune compromised
- Other conditions
- Stress, poor sleep
- Low Vitamin D?
- Mycoplasma species

VVC: Recurrent

NEW 2015 CDC Guidelines!

- 50% of women with non-albicans have minimal sx, no symptoms or treatment is challenging:
  1. Rule out other causes of vaginal symptoms
  2. Longer therapy (7-24 days) with non-fluconazole
  3. Boric acid 600 mg vaginally at hs x 14 days
     70% cure rates; Avoid in pregnancy, and ORAL
  4. IF HIV+, w C. albicans, fluconazole 200 mg po weekly
  5. Referral to specialist !!!

 NOTE: Optimal treatment remains unknown
C. albicans Chronic:  
Fungal Culture and Speciate

• ORAL:  
  ◦ Fluconazole 150 mg oral Day 1, 3, 6, total 3 doses  
  Culture negative, then 100/150/200 mg weekly x 6 mo  
  OR

• VAGINAL: 1-2x week x 6 months  
  ◦ Butaconazole (Gynazole) x 2 monthly? (no data)
  ◦ Clotrimazole, tioconazole ointment (no data)

• "TEST-OF-CURE" 2 weeks post-treatment:  
  Then - monthly culture


Non-C. albicans Chronic:  
Fungal Culture & Speciate

Longer duration Rx: 7-14 days
• Butaconazole (Gynazole) pv Stat x 1 weekly, x 2
• Boric acid suppositories pv qd x 14 days (600 mg), x2 weekly  
  ◦ Max 6 months, safety/toxicity issues, AVOID oral & in Pregnancy
• Nystatin suppositories pv qd x 14 days (100,000 u), x2 weekly  
  • Unclear efficacy, but very safe

F/u: 1-2 weeks post-rx repeat culture: if negative  
• Maintenance: 2 x weekly x 6 months+, monthly culture, PRN  
  • Butaconazole: x1 or x 2 monthly (lacking data)

REFER to specialist if symptoms recur

www.CDC.gov/stds 2010

NEW: High Correlation with Yeast and  
Mycoplasma Genitalium

• n = 516  
• High correlation with yeast and M. genitalium  
• P < 0.05  
• Lesser association between C. trachomatis, and U. urealyticum, no assoc. w N. gonorrhea


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Mycoplasma Genitalium

- "Sexual transmitted"
- More prevalent than gonorrhea
- Less prevalent than Chlamydia
- Urethritis: In men & women
- Cervicitis in women:
  - Role poorly understood
  - Still debated & more research needed

Mycoplasma Genitalium:

- Spontaneous preterm delivery: Independent risk factor
- PID: Frequently detected from cervix, endometrium
- Endometritis and PID treatment failure
  - Persistent endometritis and continued pelvic pain.
- Cefoxitin, Doxycycline - may NOT be effective:

Mycoplasma Genitalium: Treatment

- NO cell wall, so B-lactam antibiotics NOT effective
- Only use: Tetracyclines, macrolides, fluoroquinolones
  - Azithromycin 1 gm orally stat, partner too
  - Azithromycin x 5 days: 500 mg po day 1, 250 mg day 2-5
  - Moxifloxacin 400 mg orally x 14 days (PER CDC 2015)
  - Consider testing, treating partner: per Dr. Gilbert, NYC
    - If patient symptomatic!

Role of Mycoplasma and Ureaplasma Species in Female Lower Genital Tract Infections
DOI 10.1007/s11908-010-0136-x
BV: What’s NEW?

- Polymicrobial 100-1000x fold increase (abscess)
- Gardnerella, Atopobium, Mobiluncus, etc.
- Metronidazole resistance increasing up to 70%
- Avoid IUC esp. Copper (Paragard)
- Vitamin D !!!

BV Linked to Increased Risk of ObGyn Complications

- STIs
  - Herpes HSV-2
  - HPV
  - GC and Chlamydia
  - HIV (to male partners)
- PID and Infertility
- Cervicitis
- Cystitis
- Post-Gyn surgery and Postpartum infections
- Increases risk of Preterm delivery

BV: Risk Factors

- Multiple Male or Female Partners
- New Sex Partner
- Douching
- Lack of Condom Use
- Lack of Vaginal Lactobacilli
- HIV+
- Rare in Virginal Women
Diagnose BV per CDC 3 of 4 Amsel’s Criteria

- Coaty, white discharge: must correlate with other criteria
- Elevated pH > 4.7: sensitive but not specific
- KOH amine “whiff” test: predictive
- Clue cells: predictive

- Pap: DO NOT USE (low sensitivity/specificity)
- Gardnerella Vaginalis culture: is NOT specific
- Affirm: correlate with other criteria, pH, amine
- PCR: Gardnerella, Atopobium, Mobiluncus, etc.
  - Lacking data on significance of this testing

BV - CDC 2015 Guidelines: Non-pregnancy and Pregnancy (NEW)

**Recommended:** Similar efficacy
- Metronidazole 500 mg orally bid x 7 days
- Metronidazole gel, 1 applic vaginally @hs x 5 days
- Clindamycin cream 1 applic vaginally @hs x 7 days

**Alternatives:** Similar efficacy
- Clindamycin 300 mg orally bid x 7 days
- Clindamycin Vaginal Ovules, 1 vaginally @ hs x 3 days
- Clindamycin 100 mg vaginal single dose

**AVOID in Pregnancy:**
- Tinidazole 2 g orally daily x 3 days (Cat C)
- Tinidazole 1 g orally daily x 5 days (Cat C)
BV in Pregnancy: NEW 2015 CDC Guidelines

Low and High risk for Preterm Delivery:

• Evidence insufficient to assess impact of screening for BV

• Evidence inconsistent if Rx of asymptomatic pt w BV reduces adverse pregnancy outcomes

BV: NEW 2015 per CDC
Must rule out other STIs

NEW:

• “ALL women with BV should be tested for HIV and other STDs.”

• Recurrent BV: Rule out HIV

Chronic BV: Common & Complex

• 30% recur in 1-3 months, 80% at 9 Months

• Follow-up 1 month for Test of Cure: Amsel’s

• Condoms

• Avoid IUC: esp. Copper (Paragard)
Recurrent BV: NEW
2015 CDC STI Guidelines - Rule out HIV!

- Same agent or
- Different agent
- Metronidazole 0.75% gel pv twice weekly x 4-6 months (may recur after suppression discontinued)
- Metronidazole or Tinidazole 500 mg BID PO x 7 days
  then
  Boric acid 600 mg PV x 21 days then MTZ pv twice weekly x 4-6 months
- Metronidazole 2 gm PO w fluconazole 150 mg Monthly!

Chronic Bacterial Vaginosis: CDC & Not CDC

- Longer therapy: double initial therapy duration (CDC)
  Metronidazole gel, Clindamycin, Tinidazole, Boric acid
- Test of Cure, 1 month
- 4-6 months "intermittent" vaginal therapy, twice weekly (CDC)
- Condoms, No douching, avoid Copper IUC (Paragard)
- Reduce stress, no thongs, 7 Comb Hormonal Contraceptives
- NEW: Low Vitamin D & BV: Bodnar, L. J Nutr. 2009;139:1157-1161
  Vit D and DI/VLP, Vit D >50 ng/ml, Cutis 2010 July; 89
- NOT effective: LB supplements, yogurt, pH acidifying agents, H2O2 douches, treating male partner (Per CDC)

Trichomoniasis: What’s NEW?

- 7 4 Million new cases a year in US
- Increased in Teens, & Women over 40 yrs old
- ORAL metronidazole or tinidazole 2 gms PO Stat,
- Partner Rx: PO tinidazole, Flagyl, www.cdc.gov/ept
- Men: Metronidazole x 7 days more effective than Single Dose
- Follow-up: ALL Women (high recurrence rate)
CDC Trichomoniasis Treatment NEW
High in Teens and Older Women Over 40!

- Common, often ignored, latent, no screening guidelines
- Not nationally reportable
- Risks:
  HIV positive: Assoc. w/ incr. risk of Preterm Labor, PID
- Increased in women:
  - 18-39 yrs = 8.9%
  - > 40 yrs = 12% !!!
  - Black women = 13%
  - Incarcerated = ~9% men, ~32% women
  - Most unscreened and untreated!

CDC 2014 Draft
Secor 2016

Trichomoniasis: Risk Factors

- HIV positive + (up to 53% infected with Trich)
- Patients in high prevalence settings:
  - STI clinics
  - Correctional facilities
- Patients at high risk:
  - New or multiple sexual partners
  - History of STIs
  - Black women

Diagnosing Trichomoniasis in Women
70-80% Asymptomatic

- Variable symptoms, discharge, itching, lesions
  Strawberry cervix
- Vaginal pH: ≥ 4.7
- Amine, Whiff, KOH: Negative
- Wet Mount: 60-70% accurate, read immediately
  - Avoid hypersonic saline, or drying!
- Pap: NOT reliable

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Diagnosing Trichomoniasis in Women
Lab Testing: Rule out other STIs

- Culture: Gold Standard before molecular detection
  75-95% sensitivity, up to 100% specificity (S/S)
- Aptima: 95-100% sensitivity & specificity = HIGH
- OSOM in-Office: S/S 95-100% = HIGH
- Affirm VP III: S/S 63%, 99.9% = LOW
- PCR: MDL, GenPath, Quest, Lab Corp
- Vaginal & Urine testing: ~100% concordance
- Pap: NOT reliable
- Rectal testing: not recommended (Research lacking)

Trichomoniasis Treatment: NEW
2015 CDC STI Guidelines

- **First Line**: Equal efficacy
  - Metronidazole 2 gms orally, (Category B), Avoid ETOH x24h
    Safe anytime in pregnancy, avoid if breast feeding OR
  - Tinidazole (Tindamax) 2 gm orally (Cat C) Avoid ETOH x72h
    Fewer side effects, better tissue penetration, $

- **Alternative**:
  - Metronidazole, 500 mg orally BID for 7 days (HIV+) NEW

- Partner Treatment: Concurrent to patient treatment
  - Expedited partner therapy (State specific)

Trichomoniasis: NEW Persistent or Recurrent?

- Metronidazole resistance 4-10%
- Tinidazole resistance 1%

- AVOID single dose for persistent infection (and HIV+)
- Metronidazole 500 mg oral BID x 7 days
- Tinidazole or metronidazole 2 gms oral daily x 7 days

- Consult CDC: tel 404-718-4141; website CDC.gov/sti
Trichomoniasis: Patient Education

- Avoid intercourse or use condoms
- Until treatment is completed
- And/or symptoms are resolved

Trichomoniasis: NEW 2015 CDC Follow-up All Women !!!

- Due to high rate of reinfection among women: 17% within 3 months in one study!
- Re-testing is recommended within 3 months post Rx
  Esp. for HIV+ women
- NAAT may be repeated as early as 2 weeks post Rx
- Data insufficient to support retesting MEN

Vaginitis Summary

- Discuss NEW 2015 CDC recommended vaginitis treatments 15 min
- Explain advantages and disadvantages of various treatment options focusing on prevention of chronic infections 30 min
- Describe treatment challenges and conundrums involving recurrent infections 30 min
Summary and Thank you

Mimi Secor, DNP, FNP-BC, NCMP, FAANP

www.MimiSecor.com, or Facebook
Check out my “Secor Initiative” and
“Coach Kat and Dr Mimi” FB page
Text “Mimi” to 90407

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• http://depts.washington.edu/nnptc/online_training/index.html#clinicalslides

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• Journal Watch Women’s Health
  • www.jwatch.org

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• http://depts.washington.edu/nnptc/online_training/index.html#clinical slides
• www.cdc.gov/STDs/treatment

Bibliography and Resources

• cdc.gov/std/treatment (new 2015 guidelines)
• cdc.gov/std/hpv (Gardasil pt education)
• Herpesdiagnostics.com (Herpes-Select serology)
• Ascp.org, ACS.org, Digene.com (Pap guidelines)
• Asha.org (great patient education materials)

Resources

• STDcheck.org
• ASHASTD.org
• Herpeshomepage.com (inexpensive acyclovir)
• Healthcheckusa.com (by mail serology testing)
• Westoverheights.com (Terry Warren, NP website)
• Webmd.com (Terry Warren, NP answers all HSV questions)
• The Good News About the Bad News, Terry Warren, 2009