

Sexually Transmitted Diseases and HIV Infection

**Laura H. Bachmann, MD, MPH
Associate Professor of Medicine
Alabama/North Carolina STD/HIV PTC
WG Hefner Medical Center
Salisbury, NC
Wake Forest University Health Sciences
Winston-Salem, NC**

Objectives

- **As a result of participating in this activity, participants will be better able to:**
 - **Apply state-of-the-art tests for the diagnosis of *N. gonorrhoeae*, *C. trachomatis* and *T. vaginalis***
 - **Implement 2010 CDC STD Treatment Guidelines for the management of sexually transmitted diseases in HIV-infected patients**

Off-Label Disclosure

- This presentation will include discussion of the following non-FDA-approved or investigational uses of products/devices:
- Oral and rectal testing for *N. gonorrhoeae* and *C. trachomatis* with:
 - Gen-Probe APTIMA Combo 2[®]
 - BDProbeTec[™] ET
 - Roche COBAS[®] PCR
- Testing for *T. vaginalis* utilizing:
 - Gen-Probe APTIMA Combo 2[®]
 - Roche COBAS[®] Amplicor PCR

STI Syndromes

- Cervicitis
- Vaginitis
- Urethritis/urethral syndrome
- Pelvic inflammatory disease
- Epididymitis/orchitis
- Proctitis
- Disseminated disease/arthritis
- Genital ulcer disease
- Hepatitis (in certain situations...)

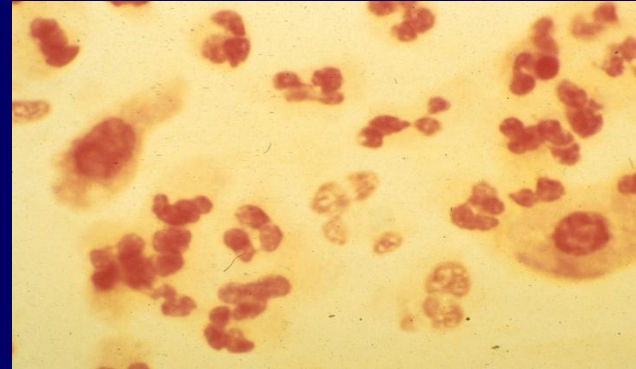
- **MOST STDs ARE ASYMPTOMATIC!!!**

STIs Facilitate HIV Transmission

- Disruption of epithelial/mucosal barriers
- Increase the number of HIV target cells in the genital tract
- Increase expression of HIV co-receptors
- Induce secretion of cytokines (increase HIV shedding)
- HIV alters natural history of some STIs



Case



- **19 yo male presents with 2 days of urethral “itching”, no urethral discharge. Unprotected insertive anal intercourse with a new male partner 2 weeks ago. 1 female and 1 male partner/3mo.**
- **History of HSV-2**

Urethritis: Etiologies

- **Infectious**
 - *N. gonorrhoeae* (20%)
 - NGU (80%)
 - *C. trachomatis* (15-40%)
 - *U. urealyticum* (10-40%)
 - *M. genitalium* (15-25%)
 - *T. vaginalis* (5-15%)
 - HSV
 - *C. albicans* (<5%)
 - Other bacteria (i.e. GNR, <5%)
 - UNKNOWN! (20-30%)
- **Non-infectious**
 - Chemical
 - Allergic
 - Autoimmune
- ? Frequency

NAATS

- Commercially available NAATs include:
 - Becton Dickinson *BDProbeTec*[®]
 - Gen-Probe *AmpCT, Aptima*[®]
 - Roche *Amplicor*[®]
- Significantly more sensitive than other tests
- Specimen types: urine, cervical, urethral, **VAGINAL**, liquid PAP (not as sensitive)

2010 CDC STD Treatment Guidelines

NGU

Recommended:

Azithromycin 1gm po x 1* Or

Doxycycline 100mg po BID*x 7

Alternative:

Erythromycin base 500mg po QID x 7d Or

Erythromycin ethylsuccinate 800mg po QID x 7d Or

Levofloxacin 500mg po qd x 7d Or

Ofloxacin 300mg po BID x 7d

*Recommended, Clinical response rates 81% and 71%, respectively (Level A/B)

2010 CDC STD Treatment Guidelines

Recurrent/Persistent NGU

In the Box:

Metronidazole 2g PO x 1

Or

Tinidazole 2g PO x 1

Plus

Azithromycin 1g po x 1*

***if not used for initial episode**

Out of the Box:

**?Moxifloxacin 400mg po qd x
7d**

Case

- 49 yo HIV+ male (CD4 410, HIV VL <48) presents for routine HIV f/u visit
- Reports 4 days of urethral burning.
- 3 male partners in previous 2 months.
 - HIV+ and HIV- partners; +100% disclosure
 - Receptive and insertive anal and oral sex
 - Receptive and insertive fisting
 - No condoms or gloves



Case continued...

- RPR – nonreactive
- GC (pharynx) – positive
- GC (urine) – positive; CT (urine) – negative
- GC (rectum) – negative; CT (rectum) – positive

- Treatment:
 - Ceftriaxone 250mg IM x 1
 - Azithromycin 1gm po x 1

Expert Opinion

2010 STD Treatment Guidelines: Gonorrhea

- Recommended
 - Ceftriaxone 250 mg IM or **IF NOT AN OPTION...**
 - Cefixime 400 mg PO or
 - Single-dose injectible **cephalosporin** regimens
- Plus
 - Azithromycin 1gm po x 1 or
 - Doxycycline 100mg po BID x 7d

Resistant Gonorrhea

- **If cephalosporin treatment failure**
 - **ID Consult**
 - **GC susceptibility testing**
 - **250 mg IM – 1gm IM ceftriaxone**
 - **Ensure partner treatment**
 - **Report to state and CDC**

NAATS for oral testing

- **Oral GC testing:**
 - Culture (se – 50%-65%; sp – 99.0 - 99.4%)
 - NAATS (se – 83.6-100%; sp -94.2-98.6%)
 - Gen-Probe APTIMA Combo 2[®]
 - BDProbeTec[™] ET
- **PCR not sufficiently specific for use at the oral site**

NAATS - Detection of Rectal GC/CT

- **GC**
 - Culture se 66.7-71.9% and sp 99.7-100%
 - PCR se 91.4-95.8% and sp 96-98.5%
 - SDA se 97.1-100% and sp 96-98.8%
 - TMA se 100% and sp 95.5-98.3%
- **CT**
 - Culture se 36.1-45.7% and sp 99.4-99.7%
 - PCR se 80.1-95.5% and sp 91.8-98.5%
 - SDA se 92.2-100% and sp 89.6-96.4%
 - TMA se 100% and sp 88.8-95.6%

Repeat Testing...

- **Repeat testing in 3 months is recommended**
 - **Studies supporting this recommendation show a considerable proportion of women re-infected at 1 to 2 months post-therapy**
 - **However repeat testing at less than one month may increase possibility of a false-positive test due to the residual DNA post-therapy**
- **Recommended for males and females**

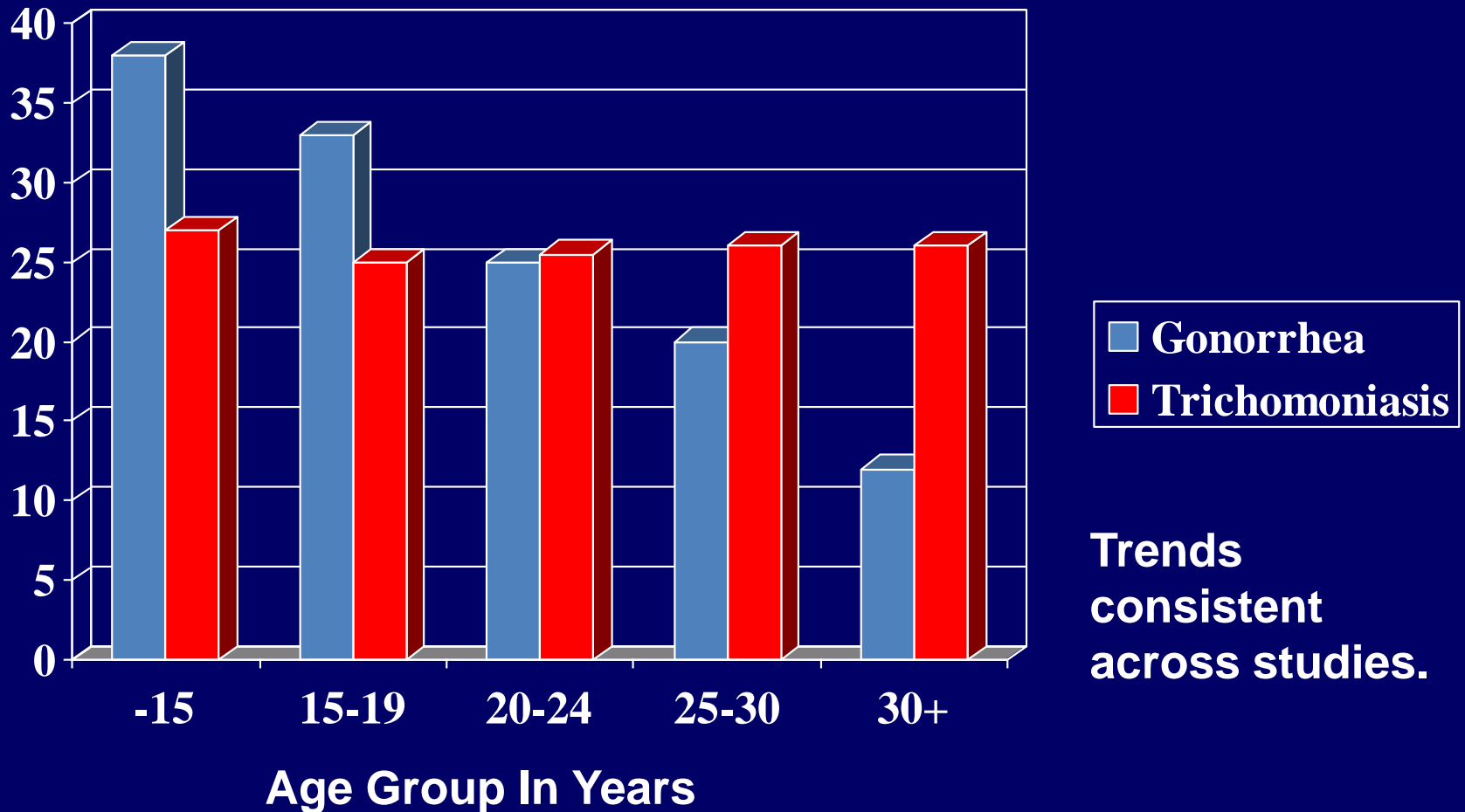
Partner Management

- Sex partners should be evaluated, tested, and treated if they had sexual contact with the patient during the 60 days preceding the onset of symptoms or diagnosis of chlamydia or gonorrhea.
- The most recent sex partner should be evaluated and treated even if the time of the last sexual contact was >60 days before symptom onset or diagnosis.

Trichomonas vaginalis

- **Most common curable STD in HIV+ women**
 - 6.1% to 33% for studies using wet prep +/- culture; up to 52.6% with nucleic acid amplification testing
- **Multiple studies support the epidemiological association between TV and HIV**
- **TV treatment reduced vaginal HIV shedding over a 1-3 month period and HIV-infected women with TV had higher prevalence of HIV RNA in vaginal secretions than those without TV.**

Rates of Gonorrhea and Urogenital Trichomoniasis in Different Age-groups



Clinical Manifestations of *T. vaginalis*



MOST TRICHOMONAL INFECTIONS ARE ASYMPTOMATIC!!!

Diagnostic Tests for TV

- **Females**

- Wet prep
- Culture
- OSOM Trichomonas Rapid Test (Genzyme Diagnostics, Cambridge, Massachusetts)
- Affirm™ VP III (Becton Dickinson, San Jose, California) *T. vaginalis*, *G. vaginalis*, and *C. albicans*.
- Gen-Probe APTIMA Combo 2®
- Roche COBAS® Amplicor PCR

- **Males**

- Culture (multiple specimen types)
- Gen-Probe APTIMA Combo 2®
- Roche COBAS® Amplicor PCR

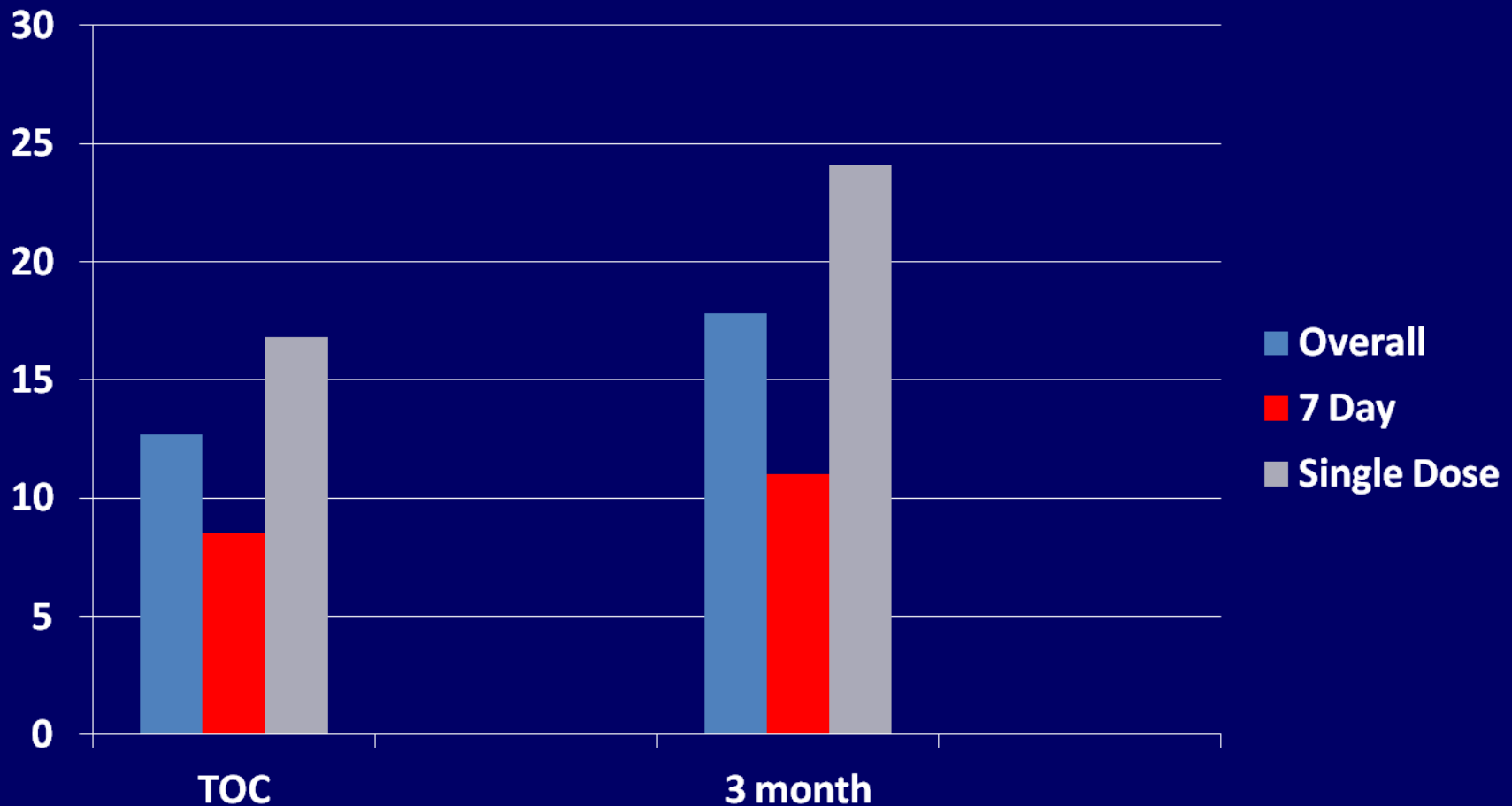
Which of the following is preferred for treating trichomoniasis in HIV-infected women?

- 1. Metronidazole gel 0.75%, one full applicator intravaginally once a day for 5 days**
- 2. Metronidazole 2g orally single dose**
- 3. Metronidazole 500mg orally twice a day for 7 days**
- 4. All of the above**

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A Randomized Treatment Trial: Single Versus 7-Day Dose of Metronidazole for The Treatment of Trichomonas Vaginalis Among HIV-Infected Women



Trichomonas vaginalis

Treatment 2010

Treatment

- No Change for HIV- individuals
- Recommendation to change treatment regimen in HIV+ women to metro 500mg po BID x 7d
- If 5-nitroimidazole allergic - desensitize
- Consider rescreen +TV in 3mo

Case

- **28yo BM with HIV dx 2009 following a seroconversion syndrome**
- **On Tenofovir/FTC/Sustiva since 7/2010**
 - **CD4 >900 and HIV VL <48 copies**
- **History of genital HSV, GC (2010)**
- **4 male partners/6mo**
- **Oral, rectal, penile exposure**

Case

- **Irritation around gluteal cleft 12/2010**
 - Seen in ED and given topical antifungal
- **Presents with widespread rash, difficulty with defecation (including pain and urgency), pus on stools and bloody stools of 1 month duration**







What is your next step?

1. Advise patient to change detergents and return in 2 weeks if the rash has not resolved.
2. Recommend that the patient changes from Atripla to a PI-based regimen
3. Check RPR
4. Perform thorough examination including inspection of all orifices
5. 3 and 4

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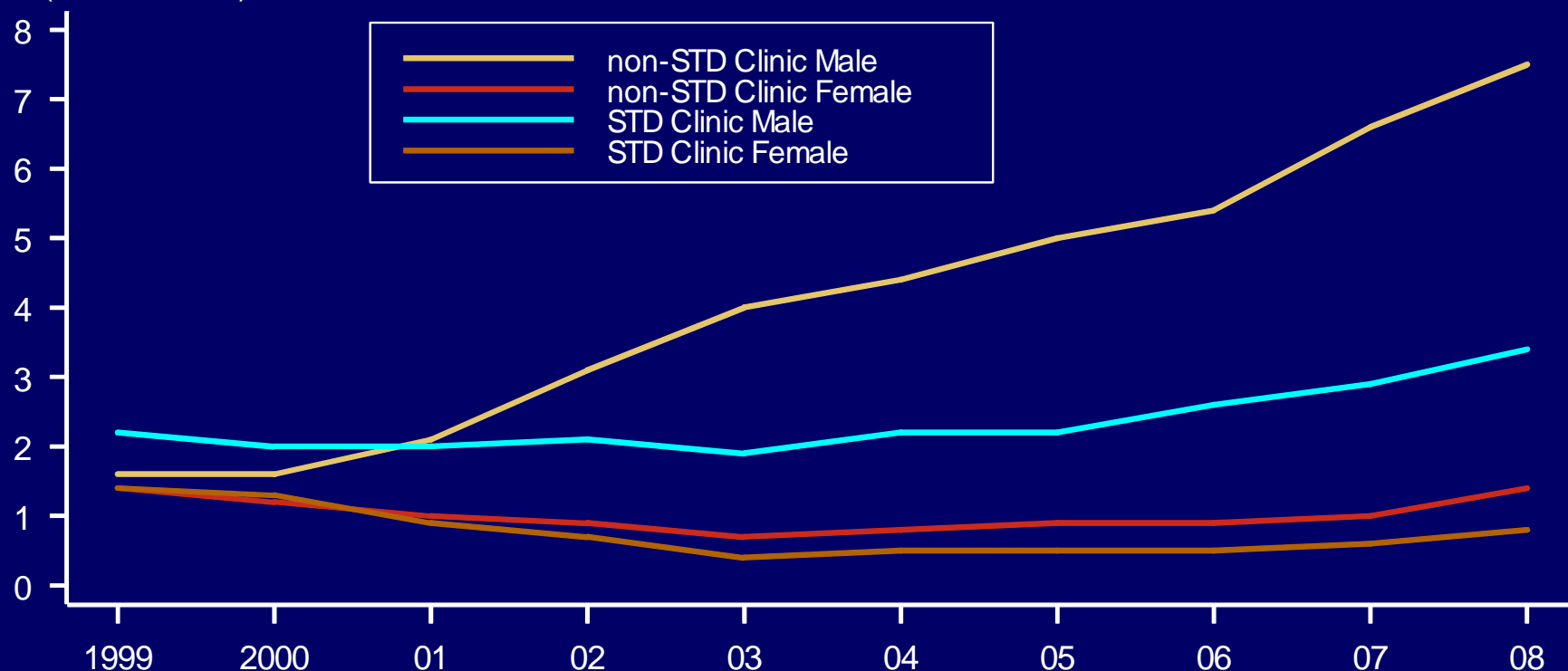
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What does this lesion represent?

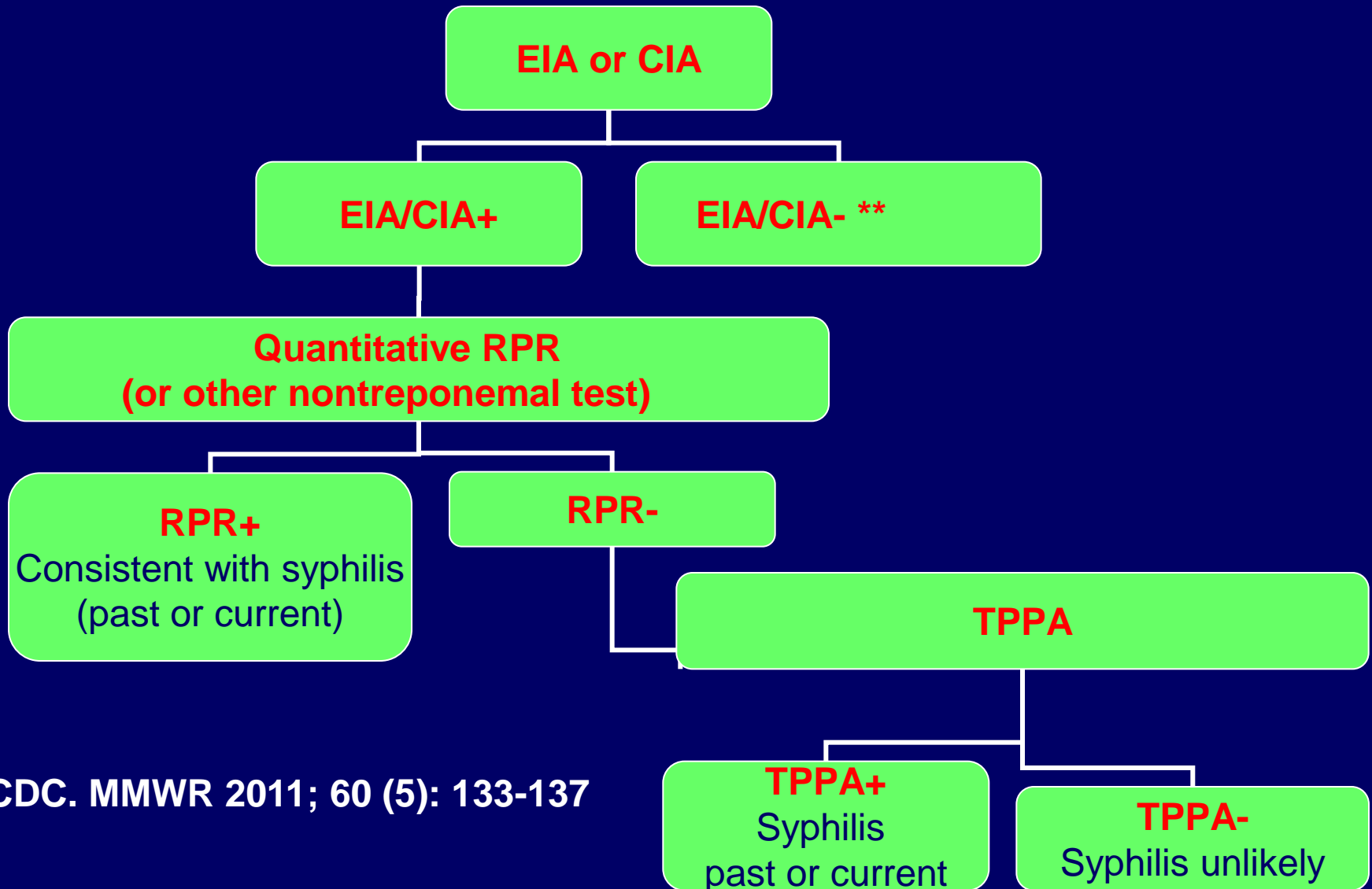


Primary and secondary syphilis — Reported cases by reporting source and sex: United States, 1999–2008

Cases (in thousands)



CDC-recommended algorithm for reverse sequence syphilis screening



CDC. MMWR 2011; 60 (5): 133-137

Syphilis Treatment

- Drug of choice remains penicillin
- Alternatives- doxycycline, ceftriaxone- optimal dose not defined (1 gm IV/IM x 8-10 d for early disease)
- Azithromycin (2 gm)-emerging data on treatment failure, not recommended for tx or prophylaxis until further data available

Recommended Criteria for CSF Exam

- **Neurologic or ophthalmic signs/sx regardless of stage**
- **Active tertiary syphilis**
- **Treatment failure**
 - **Clinical**
 - **Serologic (Titers do not decrease 4-fold within 6-12 months of therapy)**

What additional STD syndrome does this patient have?

1. Prostatitis
2. Urethritis
3. Proctitis
4. Cervicitis
5. Epidydimitis/Orchitis

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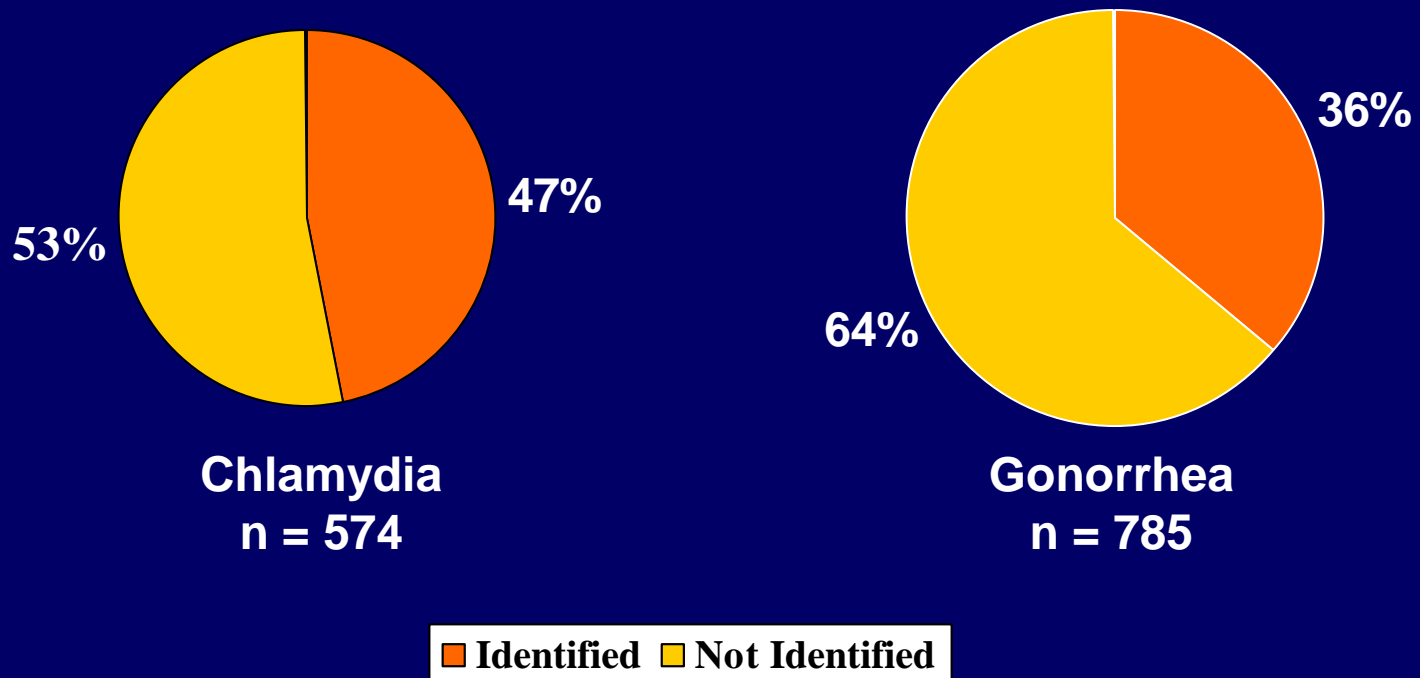
Proctitis

Evaluation and Treatment

- Evaluate for *C. trachomatis*, *N. gonorrhoeae*, *T. pallidum* and HSV
- Treat empirically with:
 - Ceftriaxone 250mg IM x 1
 - Doxycycline 100mg po BID x 7d
 - Strongly consider 21 days for clinical proctitis
 - HSV or syphilis treatment if clinically compatible

MOST RECTAL INFECTION ASYMPTOMATIC!!!!

Proportion of Chlamydial and Gonococcal Infections That Would Not Be Identified if Only Urine/Urethral Screening Performed Among Gay/Bisexual Men: San Francisco – 2003



Take Home Points

- **STDs may increase the risk of HIV transmission**
- **Most STDs are asymptomatic**
- **Sexual risk assessment and STD screening should be part of routine HIV care**
- **Ability to apply appropriate screening methods and recognize (and appropriately treat) common STD syndromes has both individual and public health benefit**

Questions?

www.cdc.gov/std/treatment