Today's presentation:

**Syphilis 2019: Return of the Great Masquerader**

*May 16, 2019*
Arizona State Office of Rural Health Monthly Webinar Series

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Today’s presentation:

Syphilis 2019: Return of the Great Masquerader

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Syphilis 2019: Return of the Great Masquerader

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Sharon Adler MD, MPH has no relevant financial relationships with an entity producing, marketing, re-selling, or distributing health care goods or services consumed by, or used on patients.
Presentation Overview:

- Epidemiology
- Screening recommendations
- Clinical manifestations and staging
- Diagnostics
- Treatment and follow-up
- Reporting
Syphilis is back!

Treponema Pallidum causes Syphilis
National STD Snapshot:

Syphilis 2017
• 30,644 Cases
• 76% increase from 2013

Congenital Syphilis
• 918 cases
• 153% increase since 2013
• 64 stillbirths
• 13 infant death

THE U.S. IS EXPERIENCING STEEP, SUSTAINED INCREASES IN SEXUALLY TRANSMITTED DISEASES

Combined diagnoses of chlamydia, gonorrhea, and syphilis increased sharply over the past five years

- Chlamydia
  - 31% Increase
  - 1.7 million

- Gonorrhea
  - 67% Increase
  - 2013: 333,004
  - 2017*: 555,608

- Syphilis
  - 76% Increase
  - 2013: 17,375
  - 2017*: 30,644

For more information, visit cdc.gov/nchhstp/newsroom

*Preliminary data

Rate (per 100,000 population)

- West
- Midwest
- Northeast
- South

Year

NOTE: The total rate of reported cases of primary and secondary syphilis for the United States and outlying areas (including Guam, Puerto Rico, and the Virgin Islands) was 9.5 per 100,000 population. See Section A1.11 in the Appendix for more information on interpreting reported rates in the outlying areas.

ACRONYMS: GU = Guam; PR = Puerto Rico; VI = Virgin Islands.
What’s up with syphilis?

STDs in Arizona

Syphilis in Arizona

The mean age for an early syphilis is 35 years.

Slide courtesy Bree Anderson MPH, AZ DHS
American Indian & Black/African Americans also have the top two highest rates of chlamydia and gonorrhea in AZ!
Primary and Secondary Syphilis — Reported Cases by Sex and Sexual Behavior, 37 States*, 2013–2017

* 37 states were able to classify ≥70% of reported cases of primary and secondary syphilis as either MSM, MSW, or women for each year during 2013–2017.

ACRONYMS: MSM = Gay, bisexual, and other men who have sex with men (collectively referred to as MSM); MSW = Men who have sex with women only.
NOTE: The total rate of reported cases of primary and secondary syphilis among women in the United States and outlying areas (including Guam, Puerto Rico, and the Virgin Islands) was 2.3 per 100,000 females. See Section A1.11 in the Appendix for more information on interpreting reported rates in the outlying areas.

ACRONYMS: GU = Guam; PR = Puerto Rico; VI = Virgin Islands.
What makes rural Arizona different from urban Arizona?

1 in 5 early syphilis cases are **female** in Maricopa and Pima County

1 in 3 early syphilis cases are **female** in rural Arizona

*Slide courtesy Bree Anderson MPH, AZ DHS*
Congenital Syphilis: Rates of Reported Cases among Infants U.S., 2017

Source CDC
Statewide increase of CS

Congenital Syphilis in Arizona

2014 2015 2016 2017 2018

Number of congenital cases

2014
2015
2016
2017
2018

Slide courtesy Bree Anderson MPH, AZ DHS
What about the babies?

**Congenital syphilis** started to increase in 2017

In 2019, there are 16 cases so far and 18 to be determined, resulting in a 45% increase from this time last year.

*Slide courtesy Bree Anderson MPH, AZ DHS*
Who Should be Screened for Syphilis?

- **Pregnancy**
  - At first prenatal visit
  - Again in the third trimester and at delivery (if at high risk, or residing in area with high syphilis morbidity)

- **MSM**
  - Including those on PrEP
  - Annually, or more frequently, 3-6 months if at high risk (multiple, anonymous partners, meth use)

- **Corrections**
  - Universal screening based on local area or institutional incidence

- **HIV+**
  - At least annually

- **STD Clinics**
  - Regardless of symptoms
  - Client with other STDs

CDC 2015 STD Treatment Guidelines
Arizona 2019 STD Screening Recommendations in Pregnancy

Syphilis Screening:
- First Prenatal Visit
- Third Trimester
  And
- At Delivery for All Women
  Regardless of Risk

<table>
<thead>
<tr>
<th>Arizona 2019 STD Screening Recommendations during Pregnancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>From CDC STD Guidelines 2015; with augmented syphilis and zika recommendations</td>
</tr>
</tbody>
</table>

- **Syphilis:**
  - All pregnant women\(^1\)
  - HIV\(^2\), HBV: All pregnant women
  - Chlamydia and Gonorrhea: All pregnant women <25 years of age and older pregnant women at increased risk\(^3\)
  - HCV and HSV: Pregnant women at increased risk\(^4\)
  - Pap test: If age >20 and if indicated by national guidelines\(^5\)
  - Zika: If at ongoing Zika exposure\(^6\)

- **First Prenatal visit**
  - Syphilis: All pregnant women (test in early third trimester at 28-32 weeks, regardless of risk)
  - HIV: If at high risk\(^7\)
  - Chlamydia: If age <25 years, positive test earlier in pregnancy, or high risk\(^8\)
  - Gonorrhea: If positive test earlier in pregnancy or high risk\(^9\)
  - Zika: If at ongoing Zika exposure\(^10\)

- **Third trimester visit**
  - Syphilis: All pregnant women, regardless of risk
  - HIV: If HIV status undocumented
  - HBV: If no prior screening or if at high risk\(^9\)
  - Zika: Contact public health to coordinate Zika testing for the infant if mother tested positive for Zika or other unspecified flaviviruses, or if the infant has abnormalities consistent with congenital Zika syndrome\(^10\)
Incubation Period
3-4 weeks (up to 90 days)

2-6 weeks

Possible relapse
After 3-8 weeks lesions disappear spontaneously

2-20 years

Ocular or Neurosyphilis can occur at any stage
Primary Syphilis
Primary Syphilis
Multiple and Atypical Ulcers
Primary Syphilis Chancre: Extragenital sites

Raguse et al. AIM 2012.

Clinics in Dermatology, 2016
Secondary Syphilis

- Usually occurs 3-6 weeks after primary chancre
- Rash (75-90%), involving palms/soles (60%)
- Generalized lymphadenopathy (70-90%)
- Constitutional symptoms (50-80%)
- Mucous patches (5-30%)
- Condyloma lata (5-25%)
- Patchy alopecia (10-15%)
- Symptoms of neurosyphilis (1-2%)
- Less common: meningitis, hepatitis, arthritis, nephritis
Secondary Syphilis
Differential Diagnosis of Secondary Syphilis Rash

- Tinea versicolor
- Pityriasis rosea
- Drug reaction
- Erythema multiforme
- Guttate psoriasis
- Scabies
- Viral Exanthem
46 yo HIV+ man presents with peri-anal lesions

Treated with liquid nitrogen for presumed genital warts.

Images courtesy of Joe Engelman City Clinic
A few days later
new rash

Also has
macular/papular rash
on trunk

Images courtesy of Joe Engelman City Clinic
Condyloma Lata
Mimic genital warts

- RPR 1:256
- Don’t forget to think about syphilis (*condylomata lata*) when you see something that looks like anogenital warts!
Secondary Syphilis: Lata

Courtesy: Gregory Melcher, UC Davis
Susan Philip, SF DPH & UCSF
Mucous Patches & Alopecia Secondary Syphilis
Neurosyphilis: Can Occur at Any Stage of Syphilis

- All patients with syphilis should be evaluated for neurologic symptoms and signs
- Asymptomatic CNS invasion common in early syphilis
- Early symptomatic forms (months to a few years):
  - Acute syphilitic meningitis (CN VI, VII, VIII)
  - Hearing loss
  - Ocular syphilis
  - Meningovascular (stuttering stroke)
  - Altered mental status
- Late symptomatic forms (> 2 years):
  - General paresis and tabes dorsalis

cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/NeurosyphilisGuide.pdf
Ocular Syphilis

Manifestations:
- Conjunctivitis, scleritis, and episcleritis
- **Uveitis**: anterior and/or posterior
- Elevated intraocular pressure
- **Chorioretinitis**, retinitis
- Vasculitis

Symptoms:
- Redness
- Eye pain
- Floaters
- Flashing lights
- Visual acuity loss
- Blindness

Diagnosis:
- Ophthalmologic exam
- Serologies: RPR, VDRL, treponemal tests
- Lumbar puncture

Criteria for CSF Examination*

- Neurologic or ophthalmic symptoms/signs
  - Auditory disease, cranial nerve dysfunction, meningitis, stroke, altered mental status, loss of vibration sense, iritis, uveitis
- Evidence of tertiary disease
  - aortitis, gumma
- Serologic Treatment failure

In HIV infection, unless neurologic symptoms, there is no evidence that CSF exam is associated with improved outcomes, so not recommended

*CDC 2015 STD Treatment Guidelines
Guidelines for Prevention and Treatment of OI in HIV+ 2013
Diagnosing Syphilis

- Sexual Risk
- Medical History
- Symptoms & Signs
- Serology
Syphilis Diagnosis

*Treponema pallidum* cannot be cultured

- **Direct detection methods**
  - Darkfield microscopy
    - Not widely available
    - Sensitivity declines with age of lesion & use of topical agents
  - Polymerase chain reaction (PCR) NAAT
    - None FDA approved for commercial use (some labs have done internal validation studies)
    - **Ulcer/Lesion exudate Sensitivity range: 60-95%**
      - Useful if positive to confirm dx; negative NAAT does not rule out dx
    - **Not** useful in TP identification in blood, serum, plasma
      - CSF NAAT can support dx, negative does not rule out dx

**Serology**

- **Non-treponemal test**
- **Treponemal tests**

CDC 2015 STD Treatment Guidelines
APHL 2018 Syphilis Meeting Report
Serologic Tests for Syphilis

- **Nontreponemal tests**
  - Rapid plasma reagin (RPR) test
  - Venereal Disease Research Laboratory (VDRL) test
  - Toluidine red unheated serum test (TRUST)

- **Treponemal tests**
  - Fluorescent treponemal antibody absorbed (FTA-ABS) test
  - Treponema pallidum particle agglutination (TP-PA) test
  - Enzyme immunoassays (EIAs)
    - Trep-Check and Trep-Sure
  - Chemiluminescence immunoassays (CIAs)
    - LIAISON and Architect
  - Microbead immunoassays (MBIA)
    - BioPlex 2200 Syphilis IgM and IgG

*Need both types of serologic tests to make syphilis diagnosis: use of only one type of test is insufficient*
Common Patterns of Syphilis Serologic Reactivity

The graph illustrates the percentage of patients who test positive for syphilis over time, distinguishing between untreated and treated cases. It shows the progression of syphilis through primary, secondary, latent, and tertiary stages.

- **FTA-Abs**
- **TPHA**
- **VDRL / RPR**

**IgM**

**Clinical stages of syphilis**
- primary lesion
- secondary lesion
- latent (asymptomatic)
- tertiary
## Performance of Syphilis Serologic Tests

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity during stage of infection, % (range)</th>
<th>Specificity, % (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Primary</td>
<td>Secondary</td>
</tr>
<tr>
<td>Nontreponemal tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VDRL [14]</td>
<td>78 (74–87)</td>
<td>100</td>
</tr>
<tr>
<td>TRUST [14]</td>
<td>85 (77–86)</td>
<td>100</td>
</tr>
<tr>
<td>RPR [14]</td>
<td>86 (77–99)</td>
<td>100</td>
</tr>
<tr>
<td>Early treponemal tests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MHA-TP [15]</td>
<td>76 (69–90)</td>
<td>100</td>
</tr>
<tr>
<td>TPPA [16]</td>
<td>88 (86–100)</td>
<td>100</td>
</tr>
<tr>
<td>TPHA [17]</td>
<td>86</td>
<td>100</td>
</tr>
</tbody>
</table>

### Enzyme Immunoassays

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity during stage of infection, % (range)</th>
<th>Specificity, % (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IgG-ELISA [18]</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>IgM-EIA [19]</td>
<td>93</td>
<td>85</td>
</tr>
<tr>
<td>ICE [20]</td>
<td>77</td>
<td>100</td>
</tr>
</tbody>
</table>

### Immunochemiluminescence assays

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity during stage of infection, % (range)</th>
<th>Specificity, % (range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLIA [21]</td>
<td>98</td>
<td>100</td>
</tr>
</tbody>
</table>

**Rare Caveat:** Prozone, False Negative in HIV+, Secondary
False Negative RPR

High Ab titers prevent antibody/antigen lattice formation

Rare

Occurs ~0.3-2% (early syphilis/ secondary)

May be more common in HIV+ and neurosyphilis

Interpreting RPR/VDRL Titers: What Do They Mean?

- Higher numbers correspond to higher level of antibodies in patient’s serum
  - Number determined by progressive dilution of serum until it becomes non-reactive
  - Two-fold change
    - Generally considered within margin of test error
  - Sustained four-fold change
    - Considered to be significant

Compare titer using same serologic test
- RPR often higher than VDRL
Diagnostic Challenges

False negatives
- Early primary - *Serology negative in up to 25% primary case*
- Prozone Reaction (RPR/VDRL)
- Untreated late latent

Biologic False Positives
- Non-trep test positive with confirmatory trep test negative
  - Viral illnesses including HIV
  - Recent immunizations,
  - IDU
  - autoimmune and chronic diseases

Treponemal Tests
- Can remain positive for life
- Specificity issues - FTA-ABS

Discordant serology
- EIA or CIA + and RPR –
- Non-syphilis trep infection

Geisler MG. *South Med Jour* 2004, **97**: 327-328.
Interpreting Syphilis Screening Results

- Asymptomatic 30 y/o Female
- Syphilis screening results are:
  - Trep IgM/IgG Antibody Positive
  - RPR Non-Reactive
  - TP-PA Reactive
Reverse Screening Algorithm

Evaluate clinically, determine if treated for syphilis in the past, assess risk of infection, and administer therapy according to guidelines if not previously treated.

If incubating or primary syphilis is suspected, treat with benzathine penicillin G 2.4 million units IM x 1 and/or repeat in 2-4 weeks.

If at risk for syphilis, repeat RPR in 2 to 4 weeks.

CDC 2015 STD Treatment Guidelines
# Sensitivity and Specificity of Treponemal Tests

<table>
<thead>
<tr>
<th>Assay</th>
<th>Overall Sensitivity (n = 262)</th>
<th>Overall Specificity (n = 403)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FTA-ABS</td>
<td><strong>90.8</strong>&lt;sup&gt;a&lt;/sup&gt; (86.7–94.0)</td>
<td>98.0 (96.1–99.1)</td>
</tr>
<tr>
<td>TPPA</td>
<td>95.4 (92.1–97.6)</td>
<td>100 (99.0–100)</td>
</tr>
<tr>
<td>Centaur CIA</td>
<td>97.3 (94.6–98.9)</td>
<td>95.5 (93.0–97.3)</td>
</tr>
<tr>
<td>Trep-Sure EIA</td>
<td>98.5 (96.1–99.6)</td>
<td><strong>82.6</strong>&lt;sup&gt;c&lt;/sup&gt; (78.4–86.1)</td>
</tr>
<tr>
<td>LIAISON CIA</td>
<td>96.9 (94.1–98.7)</td>
<td>94.5 (91.8–96.5)</td>
</tr>
<tr>
<td>Bioplex MBIA</td>
<td>96.9 (94.1–98.7)</td>
<td>96.7 (94.4–98.2)</td>
</tr>
<tr>
<td>INNO-LIA</td>
<td>96.9 (94.1–98.7)</td>
<td>98.5 (96.8–99.5)</td>
</tr>
</tbody>
</table>

<sup>a</sup> Reference: Park IU et al. 2018, Clin Infect Dis

<sup>b</sup> Reference: Park IU et al. 2018, Clin Infect Dis
Neurosyphilis Diagnosis

- CSF VDRL has limitations
  - Very specific but not very sensitive
  - Only test approved for CSF specimen
  - CSF VDRL negative patients consider neurosyphilis treatment if no other etiology identified and
    - CSF WBCs >5 in HIV negative patients
    - CSF WBCs >20 in HIV infected patients*

- CSF FTA-abs not specific, a negative test result may help rule out neurosyphilis (not if clinical suspicion is high**)

- CSF-TP-PA limited data but may support diagnosis

*CDC 2010 STD Treatment Guidelines
Syphilis Staging Flowchart

SIGN OR SYMPTOMS?

NO

NO

YES

YES

NO

LATENT

NEUROSYPHILIS
(Either Early or Late/Unknown)

EARLY LATENT
(< 1 year)

LATE LATENT or UNKNOWN DURATION

ANY IN PAST YEAR?

- Negative syphilis serology
- Known contact to an early case
- Good history of typical signs/symptoms
- 4-fold increase in titer
- Only possible exposure was this year

 Chancre
PRIMAR Y

Rash, etc.
SECONDARY

Neuro/ocular

+/-

+/-

+/-
Benzathine penicillin G* 2.4 million units IM in a single dose

* Bicillin L-A is the trade name. DO NOT USE Bicillin C-R!
** No enhanced efficacy of additional doses of BPG, amoxicillin or other antibiotics even if HIV infected

Alternatives (non-pregnant penicillin-allergic adults):
- Doxycycline 100 mg po bid x 2 weeks
- Tetracycline 500 mg po qid x 2 weeks
- Ceftriaxone 1 g IV or IM qd x 10-14 d

CDC 2015 STD Treatment Guidelines
www.cdc.gov/std/treatment
Serologic Response to Therapy: HIV + Early Syphilis

Benzathine penicillin G* 7.2 million units IM total in 3 doses of 2.4 MU each at one week* intervals

- Maximum 10-14 day interval (7-9 day ideal)
- 7 day interval in pregnancy (6-8 day may be ok)

Alternatives (non-pregnant penicillin-allergic adults):
  - Doxycycline 100 mg po bid x 4 weeks
  - Tetracycline 500 mg po qid x 4 weeks

CDC 2015 STD Treatment Guidelines
www.cdc.gov/std/treatment
Jarisch-Herxheimer Reaction

- Acute febrile reaction that may occur within 24 hours (usually 2-8 hours) of syphilis treatment
- Headache, myalgias and exacerbation of cutaneous lesions (rash)
- Most common in primary, secondary
- Uncommon in latent
- Does not indicate drug hypersensitivity

CDC 2015 STD Treatment Guidelines
Neurosyphilis/Ocular Syphilis Treatment

Aqueous crystalline penicillin G 18-24 million units IV daily administered as 3-4 million units IV q 4 hr for 10-14 days

* Consider: BIC 2.4 million units IM once per week up to 3 weeks after completion of 10-14 day course for late syphilis

CDC 2015 STD Treatment Guidelines
www.cdc.gov/std/treatment
Syphilis Staging → Treatment

NEUROSYPHILIS
( Either Early or Late/Unknown)

Aqueous Crystalline Penicillin G 18-24 million units IV daily administered as 3-4 million IV q 4 hr for 10 -14 d
* BIC IM may be added for late/unk duration to achieve 3-week course

PRIMARY

SECONDARY

EARLY LATENT
(< 1 year)

Benzathine penicillin G 2.4 million units IM in a single dose
* Only one dose of BIC is recommended for early syphilis in HIV-infected persons, extra doses not needed

LATE LATENT or UNKNOWN DURATION

Benzathine Penicillin G 7.2 million units total, given as 3 doses of 2.4 million units each at 1-week intervals
* Max interval = 14 days; 7 days if pregnant

*Always order an RPR on the day of treatment!
Importance of Day of Treatment Titer

- Higher peak titer at treatment, but not checked
- RPR 1:256  RPR 1:1024  RPR 1:256
- Day of initial lab test  Day of treatment  Day of follow up titer to assess response

- Establishes baseline to compare response post treatment
- Frequently forgotten and without baseline makes assessment of titer response difficult
Follow-up and Serologic Response

» Primary and Secondary Syphilis
  > Examine at ~1 week to confirm improvement of symptoms ($1^o$ and $2^o$)
  > Repeat titers at 6 and 12 months ($3, 6, 9, 12, and 24$ for HIV+)
  > Expect fourfold decrease in serology in $6-12$ months
    ($12-24$ months for HIV+)

» Latent Syphilis
  > Re-examine at 6, 12, and 24 months ($6, 12, 18$ and 24 for HIV+)
  > Expect fourfold decrease in serology in 12-24 months
    (if titer initially $>1:16$) ($24$ months for HIV+)

CDC 2015 STD Treatment Guidelines
**Syphilis Treatment Failures**

**Clinical Failure:** Slow resolution or relapse of mucocutaneous signs

**Serologic Failure:**
- Sustained (> 2 weeks) fourfold increase in nontreponemal titers
  - Reinfection may be difficult to rule out

**Serologic Non-response:** Failure of initially high nontreponemal titers to decrease four-fold
- ? Possible treatment failure"
- Estimate ~15-20%* don’t have 4-fold drop
  - Earlier stage/higher titer more likely to decline 4-fold

* Seña AC, et al. CID 2011
* Rolfs RT, et al. NEJM 1997  
CDC 2015 STD Treatment Guidelines
HIV test and CSF evaluation
- Treat based on CSF findings
- If LP normal retreat with Benzathine Penicillin G 7.2 million units (2.4 MU weekly x 3)

Optimal management unclear for primary/secondary syphilis w/o 4-fold drop in titer
- Additional serologic/clinical follow-up necessary and HIV test
- If follow-up uncertain retreat with Benzathine Penicillin G 7.2 million units (2.4 MU weekly x 3)
- Consider LP

Follow titers annually- need for further treatment/LP unclear
Reporting: Syphilis Cases

- Report all syphilis cases to Local Health Department
- Report within 5 days
- Report within 1 day if pregnant female case/suspect case

www.azdhs.gov/preparedness/epidemiology-disease-control/index.php#reporting-providers
Syphilis Partner management

• 45 male presents as contact to early case of syphilis.
• Asymptomatic, no syphilis findings on exam.
• RPR is non reactive.
• Does this contact need treatment?
Management of Contacts to Infectious Syphilis

- Contacts to primary, secondary or early latent
  - Exposed ≤ 90 days before diagnosis
    - Might be infected even if seronegative (can take up to 90 days for serology to convert); treat presumptively
  - Exposed >90 days before diagnosis
    - Serologic tests are negative, no treatment is needed
      - If follow-up uncertain or serology unavailable then treat presumptively

CDC 2015 STD Treatment Guidelines
Congenital Syphilis

- Infection of the fetus or newborn at any stage during pregnancy
- Manifestations can be early or late including:
  > Stillbirth, miscarriage, neurologic abnormalities, bony abnormalities, hearing loss, visual loss

Photos courtesy of Public Health Image Library, CDC and Dr. Norman Cole
1) Screen for syphilis in the 1st trimester
2) Repeat screening at 28 weeks and again at delivery – AZ guidance 2019 (Do not D/C mom and baby without documenting a negative serology)
3) Timely treatment of syphilis during pregnancy
   - At least 4 weeks prior to delivery
   - Benzathine PCN is the only treatment option, no alternatives

CDC 2015 STD Treatment Guidelines
Syphilis Rates are increasing among MSM and women

Congenital syphilis is devastating and preventable

Recognize symptoms and signs
- Evaluate for neuro/ocular signs
- Empiric treatment if high suspicion

Assess risk and screen

Determine stage of disease to guide treatment
- Get day-of-treatment titer
- Follow titers to assess treatment
- Use Bicillin L-A as first line

Report to local health department
Clinical Guidelines and Consultation

STD Clinical Consultation Network
stdccn.org

CDC STD Treatment Guidelines App
Available now, free
Search for “STD TX”
Questions and Discussion
Please type your questions and comments into the Zoom Webinar Platform Chat box.

Syphilis 2019: Return of the Great Masquerader

Sharon Adler, MD, MPH
California Prevention Training Center
Assistant Clinical Professor at University of California, San Francisco (UCSF), Family and Community Medicine
Thank you!

Find this and our previous webinars at:

http://www.crh.arizona.edu/programs/sorh/webinars

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This information or content and conclusions are those of the author and should not be construed as the official position or policy of, nor should any endorsements be inferred by HRSA, DHHS or the U.S. Government.
» Extra Slides
Cases of primary/secondary/early latent syphilis (N=470)
- RPR titer day 0,7,14 post Rx
- 20% had titer rise 14 day after Rx (88% 2-fold rise, 12% 4-fold rise)
- Primary cases had greatest titer rise
- Early rise in titer not indicative of increased risk of Rx failure

Holman et al. STD 2012
Syphilis in Pregnancy: Follow-up

» Titers at 28-32 weeks of gestation, delivery, and following recommendations for stage of disease

» Serologic titers can be checked monthly in high-risk women

» Clinical and serologic response should be appropriate for stage

  > Most women will deliver before serologic response to treatment can be assessed

CDC 2015 STD Treatment Guidelines
Neurosyphilis

Neurosyphilis can be characterized as early/acute or late disease. Early neurosyphilis can be symptomatic or asymptomatic and can occur at any stage of syphilis, including concurrently with primary or secondary disease. Early symptomatic neurosyphilis consists of syphilitic meningitis, ocular syphilis and/or otosyphilis. Rarely, vascular complications can result from syphilitic meningitis and lead to an ischemic stroke; vascular complications are more commonly associated with late disease.

Early Neurosyphilis: Review of Systems (*pertinent positive symptoms*)

**GENERAL/CONSTITUTIONAL:** headache, fever, fatigue, weakness, dizziness

**HEAD, EYES, EARS, NOSE AND THROAT:**
- Eyes- pain, redness, loss of vision, double or blurred vision, photophobia, flashing lights or spots
- Ears- ringing in the ears, loss of hearing

**GASTROINTESTINAL:** nausea, vomiting

**MUSCULOSKELETAL:** neck pain/stiffness, muscle weakness

**NEUROLOGIC:** headache, dizziness, muscle weakness, confusion, loss of consciousness, seizures, difficulty speaking

**PSYCHIATRIC:** confusion

Early Neurosyphilis: Focused Neurologic Exam

- Cranial Nerve Exam: assess for cranial nerve palsies (key maneuvers in bold)
New Point-of-Care Syphilis Tests

Rapid Immunochromatographic Assays: lateral flow immunoassays (e.g. rapid HIV-antibody tests, urine HCG)

Syphilis Health Check
Treponemal only
Results in 10 min
FDA approved, CLIA waived
US $8 per test

DPP Syphilis Screen and Confirm
Combined treponemal and non-treponemal results
Results in 15 min
Seeking FDA, eligible for CLIA waiver
US 1.50-$2 per test
Patients with suspected ocular syphilis should receive a lumbar puncture and be treated for neurosyphilis.

**Note:** A negative LP does not rule out ocular syphilis.

Treatment for ocular syphilis is IV PCN (neurosyphilis regimen) *even if the CSF lab tests are negative*.

**HIV test** if not already known to be HIV-infected.
Syphilis: Management of Contacts: Late Syphilis

- Long term sex partners of patients who have late syphilis should be evaluated clinically and serologically for syphilis and treated on the basis of findings

CDC 2015 STD Treatment Guidelines