Syphilis and HSV
Ann K Avery, MD

GUD pictures
Non Infectious GUD

Case

- 28 year-old man with ulcer on shaft penis for 1 week – relatively painless
- Also non-tender right-sided lymphadenopathy
- Reports unprotected vaginal sex with sex worker 3 weeks ago
- No history of STI
- HIV status: negative (> 6 months ago)
Case 2
Primary and Secondary Syphilis—Rates by Age Among Men Aged 15–44 Years, United States, 2000–2009

Rate (per 100,000 population)

Year

Age Group

15–19
20–24
30–34
35–39
25–29
40–44

Primary and Secondary Syphilis—Reported Cases* by Stage, Sex, and Sexual Behavior, United States, 2009

Cases

0
1,000
2,000
3,000
4,000
5,000
6,000

MSW†
Women
MSM‡

Primary
Secondary

† Of the reported male cases of primary and secondary syphilis, 20% were missing sex of sex partner information.
‡ MSW = men who have sex with women only; MSM = men who have sex with men.
Primary and Secondary Syphilis—Reported Cases* by Sex, Sexual Behavior, and Race/Ethnicity,† United States, 2009

- Of the reported male cases of primary and secondary syphilis, 20% were missing sex of sex partner information; 1.7% of reported male cases with sex of sex partner data were missing race/ethnicity data.
- No imputation was done for race/ethnicity.
- MSW = men who have sex with women only; MSM = men who have sex with men.

<table>
<thead>
<tr>
<th>Case Type</th>
<th>Whites</th>
<th>Blacks</th>
<th>Hispanics</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSW ‡</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSM ‡</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Congenital Syphilis—Reported Cases Among Infants by Year of Birth and Rates of Primary and Secondary Syphilis Among Women, United States, 2000–2009

- CS = congenital syphilis; P&S = primary and secondary syphilis.

<table>
<thead>
<tr>
<th>Year</th>
<th>CS* cases (in thousands)</th>
<th>P&amp;S* rate (per 100,000 women)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td>2001</td>
<td>0.2</td>
<td>2</td>
</tr>
<tr>
<td>2002</td>
<td>0.4</td>
<td>2</td>
</tr>
<tr>
<td>2003</td>
<td>0.4</td>
<td>2</td>
</tr>
<tr>
<td>2004</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>2005</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>2006</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>2007</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>2008</td>
<td>0.6</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>0.6</td>
<td>2</td>
</tr>
</tbody>
</table>
Syphilis

- Caused by *Treponema pallidum*
- Systemic illness characterized by distinct clinical phases—primary, secondary, latent and tertiary
- Complication -> congenital disease
- Diagnosed by darkfield microscopy in early stages, and serologic testing in later stages

Primary syphilis - chancre
Primary syphilis - chancre of anus
Differential Diagnosis of GUD

- Syphilis (chancre)
- Herpes
- Traumatic
- Chancroid
- Lympho granuloma venereum
- Granuloma inguinale
- Malignancy
- Rheumatologic
Primary Syphilis and serology

- RPR/ VDRL may be negative or very low (1:1)
- FTA becomes positive prior to non-treponemal test (RPR/ VDRL)
- Darkfield microscopy is gold standard

Syphilis - *Treponema pallidum*
But the patient didn’t come in for treatment and now its 4 MONTHS LATER...
Secondary syphilis
Secondary syphilis
Differential Diagnosis – Rash

- Secondary Syphilis
- Tinea versicolor
- Pityriasis rosea
- Allergic reaction to drugs or contact dermatitis
- Post inflammatory pigmentation from acne, chicken pox, etc.

Differential Diagnosis – Rash

- Psoriasis
- Scabies
- Viral exanthem
- Rocky mountain spotted fever
- Hand mouth foot syndrome
- Leukemia cutis
Secondary syphilis - condyloma lata

Secondary syphilis - alopecia
Secondary Syphilis

- RPR / VDRL always positive
- Possibility of “prozone” effect in very high titers
- Treatment may trigger Jarisch-Herxheimer reaction
  - Acute febrile reaction w/ myalgias and headache within 24 hours of Rx

Treatment of syphilis

1\textsuperscript{st}, 2\textsuperscript{nd} and early latent

- 2.4 MU Benzathine PCN G IM
  - (possible Jarisch-Herxheimer Rxn in secondary syphilis)
- Doxycycline 100 mg po bid times 15 days if penicillin allergic

F/U clinically and serologically at 6, 12 and 24 months- should see 4 fold (2X) decrease in titer. Repeat HIV testing if initially negative
Infectious Syphilis and Serology

![Graph showing serological titers over time](image)

- **Primary**
- **Secondary**

Serological titers:
- 1:1 > 1:2 > 1:4 > 1:8 > 1:16 > 1:32 > 1:64 > 1:128 > 1:256 > 1:512 > 1:1024

![Test card with titers](image)
Serologic Tests

► Non-treponemal (screening)
  ▪ VDRL
  ▪ RPR
► Treponemal (confirmatory)
  ▪ FTA-abs
  ▪ TPHA
  ▪ MHA-TP

Reactive Screening Blood Tests With No Clinical Findings

► If no past history, then order confirmatory blood test for syphilis (F.T.A. or T.P.P.A.)
► If confirmatory test non reactive. Stop. No syphilis, no treatment.
► If reactive, then patient requires treatment
Early (< one year duration) and Late Latent (> one year duration) Syphilis

Reactive Screening Blood Tests With No Clinical Findings

► Ask patient about history of syphilis, if so, when, where, what treatment and titer of the blood if pt. recalls
► Call local health department for the same to confirm

Early Latent Syphilis (< than one year duration)

► Usually VDRL titer is higher (1:16 or higher)
► Partner has symptoms of infection
► Past record of negative blood screening test within one year (previous clinic visit or physical)
► Delivery within one year and without problem
► Rising titer by 4 fold or 2 dils after 4 weeks
► History of sore in past months or within the last year
Treatment for late latent or unknown duration

- 2.4 MU Benzathine PCN G IM q week x 3 weeks

- Doxycycline 100 mg po bid times 30 days if penicillin allergic

Alternate algorithms for diagnosis of syphilis
## CSF evaluation - when to do?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>No change in titer after treatment</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Treatment “failure” without evidence for re-infection</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>Consult for neurologic concerns and + serum test</td>
<td><strong>YES</strong></td>
</tr>
<tr>
<td>HIV + and CD4 &lt;200</td>
<td><strong>CONSIDER</strong></td>
</tr>
</tbody>
</table>

## Measures to control syphilis

- **Partner services**
  - Identify networks of infections
  - Ensure treatment of patients and their partners
- **Provider Education**
  - Disease awareness
  - Increase testing
Partner Services

"Johnny Gets the Goods": A 1945 government-produced health department comic book on STDs. See also "BORDER:" http://www.ep.tv
Asymptomatic Exposures

- Patients that have been exposed to syphilis within the last 90 days should also receive 2.4 MU BIC as well as 6 mo retest.

Syphilis in Pregnancy

Preventing congenital syphilis is feasible!

How to accomplish:
Advocate blood screening tests for syphilis

- At first prenatal visit
- 28 weeks of pregnancy
- At delivery (maternal serum, if necessary neonates serum)
Syphilis in Pregnancy

► If syphilis is confirmed
  ▪ Treat pregnant patient
  ▪ Report to health department
  ▪ Strict serologic blood test for follow up for pt. and the neonate if pt. delivered < 4 weeks after treatment

Syphilis in Pregnancy

► If not diagnosed properly or not adequately treated – outcome:
  ▪ Spontaneous miscarriage
  ▪ Still birth or fetal demise
  ▪ Premature labor and/or fetal distress
  ▪ Intrauterine growth restriction/low birth weight
  ▪ Congenital anomalies
    ▪ Neonatal death
    ▪ Early and late congenital stigmata in infants and children
Top Lt – syphilitic interstitial keratitis, Top Rt – Hutchinson’s teeth
Bottom Lt – Rhagades, Bottom Rt – Mulberry molar

FIGURE 82-13. Tibial thickening (aber shin) due to perioditis in late congenital syphilis, one of Hutchinson’s cases. (From Hutchinson J. Syphilis. London: Cassell, 1905.)
Treatment

Always refer to current CDC treatment guidelines for syphilis

► Benzathine Penicillin G. L.A. (Bicillin) is the treatment of choice for all patients and especially pregnant patients and HIV positive patients
► 2.4 million units Intramuscular (IM) in buttock X one

Key Principles

► Syphilis is curable with single shot
► Long latency and period of infectiousness
► Transmission route – sex
► Often asymptomatic or nonspecific symptoms