Syphilis Redux
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Objectives

1. Provide a brief (very) review of the syphilis story.

2. Define and discuss the stages of syphilis.

3. Outline the current treatment guidelines for each stage.

4. Provide updated South Carolina Congenital Syphilis analytics.

Disclosures

1. Graphic photographs or cartoons used during this presentation might be offensive to some; for this I apologize in advance.

2. It is difficult to speak about sexually transmitted diseases without using sexually explicit terms; I do not wish to offend, intentionally or inadvertently.
Disclosures

3. The material presented here represents a compilation of information obtained from many sources, referenced at the end of the presentation. I freely admit to liberal use of Cut and Paste actions. My thanks to Dan Drociuk for educating me in the use of the Snipping-tool.

Etymologia: Syphilis

From:

Syphilis sive morbus gallicus (1530)
("Syphilis or the French disease") by Italian physician and poet Girolamo Fracastoro.


Latin Lesson

Venereal...Latin

Venereus (venus)
Loosely: “from love or desire”

Lues venerum
“disease, sickness or pestilence” as a result of venereus
South Carolina Data

Total Syphilis Cases
Infectious, Congenital, And Latent (non-infectious)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>794 cases</td>
</tr>
<tr>
<td>2015</td>
<td>978 cases</td>
</tr>
<tr>
<td>2016</td>
<td>860 cases*</td>
</tr>
</tbody>
</table>

*preliminary

My thanks to Terri Stephens
Director, Division of Surveillance and Technical Support, SCDHEC

Primary and Secondary Syphilis Cases
(Infectious)

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>250 cases</td>
</tr>
<tr>
<td>2015</td>
<td>327 cases</td>
</tr>
<tr>
<td>2016</td>
<td>280 cases*</td>
</tr>
</tbody>
</table>

*preliminary

Congenital Syphilis Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>5 cases</td>
</tr>
<tr>
<td>2015</td>
<td>5 cases</td>
</tr>
<tr>
<td>2016</td>
<td>4 cases*</td>
</tr>
</tbody>
</table>

*preliminary

Syphilis

- Caused by bacterium (spirochete) Treponema pallidum
- “The great imitator” or “Lues”
- Passed from person to person through direct contact with syphilitic sore on external genitalia, vagina, anus, rectum, lips or mouth
- Classified in stages depending on signs and symptoms
Stages of Syphilis

Primary Stage  Secondary Stage

Latent  Congenital Syphilis

Tertiary or Late Stage

Primary Stage

- Single or multiple sores (also called chancre)
- Time between infection and symptoms ranges from 10-90 days (avg 21 days)
- Painless sore (where T. pallidum enters the body)
- Lasts 3-6 weeks and heals with or without treatment
Evaluating Patients For Primary Syphilis

Patient with new genital ulcer or suspicious genital lesion

SEXUAL HISTORY, RISK ASSESSMENT & PHYSICAL EXAM

Laboratory

- Darkfield (if available)
- RPR or VDRL serology
- Stat RPR (if available)
- TP-PA or FTA-ABS to confirm reactive RPR or VDRL
- HSV culture or PCR1
- HSV type-specific serology
- HIV Test

Source: Dr. John Toney, Southeast STD/HIV Prevention Training Center
SEXUAL HISTORY & RISK ASSESSMENT

Sexual History, Risk Assessment (past year):

- gender of partners
- number of partners (new, anonymous, serodiscordant HIV status, exchange of sex for drugs or money)
- types of sexual exposure
- recent STDs; HIV serostatus
- substance abuse
- condom use

History of syphilis—prior syphilis (last serologic test & last treatment)

general Physical

- oral cavity
- lymph nodes
- skin
- palms & soles
- neurologic
- genitalia/pelvic
- perianal

Syphilis - *Treponema pallidum* on darkfield
Syphilis Screening
OLD VERSION

Non-treponemal tests
  • Rapid Plasma Reagin (RPR)
  • Venereal Disease Research Laboratory (VDRL)

If Positive or Reactive, confirm by:
  • Treponemal test
  • Fluorescent treponemal antibody absorbed (FTA-ABS)
  • T. pallidum passive particle agglutination assay (TP-PA)
  • Enzyme immunoassays (EIAs)
  • Immunoblots
  • Rapid treponemal assays

Issues with OLD Screening Process

False NEGATIVES with RPR or VDRL especially in early primary stage if tested too early in disease process.

False POSITIVES detected in persons with: other infections (e.g., HIV), autoimmune conditions (Lupus, RA, Scleroderma, etc), pregnancy, IDU, among others.

RPR and VDRL tests cannot be used interchangeably.
Syphilis Screening
NEW VERSION
Tests specific for *T. pallidum* IgG antibodies
- Automated multiplex flow immunoassay (MFI)
- Treponemal pallidum immobilization assay (TPI)
- Treponemal pallidum hemagglutination assay (TPHA)
- Enzyme immunoassay (EIA)
- Westernblot (WB), pseudoblots, chemiluminescence and microsphere immunoassays and/or chromatographic point-of-care tests.
- Old Friends FTA-ABS or TP-PA

Reverse Screening Algorithm
Benefits: a.) Identify persons previously treated for syphilis  
  b.) Identify persons with false positives, but a low likelihood of infection.
Disadvantage: Positive treponemal test results require a standard nontreponemal test with titer that can be used to guide patient management. If the nontreponemal test is negative, the patient should have another, different treponemal test.
Secondary

- Skin rash and mucous membrane lesions
- Rash usually does not itch
- Can have fever, swollen lymph nodes, sore throat, patchy hair loss, headache, weight loss, muscle aches, fatigue
- Resolves with or without treatment
Palmar and plantar rash

Source: Connie Celum, Walter Stamm, Seattle STD/HIV Prevention Training Center

Condylomata lata, labia

Source: Connie Celum, Walter Stamm, Seattle STD/HIV Prevention Training Center

Secondary stage syphilis sores (lesions) on the palms of the hands. Referred to as "palmar lesions."
Stages of Syphilis

Latent or Late (Tertiary)

- Affects internal organs: brain, nerves, eyes, heart, blood vessels, liver, bones and joints
- Difficulty coordinating movement, paralysis, numbness, gradual blindness, dementia
- People do not transmit syphilis sexually at this stage

Recommended Regimen for Adults
Benzathine penicillin G, 2.4 million units administered IM as a single dose

Recommended Regimen for Infants and Children
Benzathine penicillin G, 50,000 units/kg administered IM, max dose 2.4 million units.

Treatment for Syphilis

Primary
- PENICILLIN

Secondary
- PENICILLIN
Treatment for Syphilis

Tertiary
• PENICILLIN

Latent (early or late)
• PENICILLIN

Recommended Follow-up After Treatment

Primary and Secondary*
Clinical and serologic evaluation at 6 and 12 months (use same quantitative non-treponemal test).

Latent*
Repeat same quantitative non-treponemal tests at 6, 12, and 24 months.

All Stages if HIV +
Clinical and serologic evaluation at 3, 6, 9, 12, and 24 months (use same quantitative non-treponemal test).

*HIV neg
Congenital syphilis (CS) occurs when a mother infected with syphilis transmits the infection to her child during pregnancy. CS can cause severe illness, miscarriage, stillbirth, and early infant death.

Syphilis infection during pregnancy can result in significant health problems for an infant. Historical data indicate that up to 40% of pregnancies in women with untreated syphilis will result in miscarriage, stillbirth, or infant death.

Infants who live may develop:
- Skeletal abnormalities
- jaundice
- hepatosplenomegaly
- anemia
- optic atrophy
- interstitial keratitis
- sensorineural deafness
- or meningitis, which can cause developmental delays and seizures.
Congenital syphilis exhibiting classic skin rash

Source: Ron Ballard, Centers for Disease Control and Prevention, Division of STD Prevention

Congenital syphilis exhibiting Hutchinson's Teeth

Source: Division of STD Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention
Summary Points

- Syphilis is classified in Stages and the stage determines the treatment
- You need labs, clinical exam and past history to make an accurate diagnosis of syphilis
- Labs can have False Positive results
- It's not always "cut and dried" with syphilis and it's OK to "call for help"

References

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