ECHO IDAHO: SYPHILIS IN PREGNANCY

Overview & Epidemiology

8/12/20

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&

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The speakers have no relevant financial relationship(s) to disclose.

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Learning Objectives

• Understand the increasing prevalence of syphilis in the USA and Idaho
• Effects of syphilis on pregnancy and neonatal outcomes
• Screening recommendations in pregnancy
• Treatment in pregnancy
Syphilis

**FIGURE 3** Most common manifestations of secondary syphilis. A, Condyloma Lata on the perineum. This lesion can be uncomfortable, often described by the patient as feeling "sore." B, Palmer and planter rash. Source: 3A. Image courtesy of Joyce Akers and the Centers for Disease Control Public Health Image Library. 3B. Reprinted from Rac et al.\textsuperscript{11} with permission from Elsevier [Colour figure can be viewed at wileyonlinelibrary.com]

Rac et.al. Prenatal Diagnosis. 2020;1–12
# Syphilis

## TABLE 1  Clinical findings of Syphilis according to stage of disease

<table>
<thead>
<tr>
<th>Stage of Syphilis</th>
<th>Clinical findings</th>
<th>Location/characterization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Syphilis</td>
<td>Chancre Lymphadenopathy</td>
<td>Distributed widely, commonly involve the palms and soles.</td>
</tr>
<tr>
<td>Secondary Syphilis</td>
<td>Rash (Figure 3A). Patchy alopecia Condyloma lata (Figure 3B) Mucous patches Generalized symptoms Parenchymal effects (less common)</td>
<td>Macular, papular, papulosquamous, pustular, and nonpruritic. Scalp hair or eyebrows. Warm/moist intertriginous areas such as vulva, inner thighs, axillae, perineum, skin under breasts Mouth, throat, or genital areas Fever, Sore throat Weight loss, Malaise Anorexia, Meningismus Hepatitis, Gastrointestinal symptoms, Nephrotic syndrome, Arthritis Periostitis, Optic neuritis</td>
</tr>
<tr>
<td>Tertiary Syphilis</td>
<td>Granulomatous lesions Cardiovascular</td>
<td>Skin, mucous membranes, skeleton Typically Aortic lesions</td>
</tr>
<tr>
<td>Neurosyphilis</td>
<td>CNS Ophthalmologic</td>
<td>Cognitive dysfunction, motor or sensory deficits, auditory symptoms, cranial nerve palsies, meningitis, stroke, Tabes Dorsalis (syphilitic myelopathy) Uveitis, retinitis, optic neuritis, Argyll Robertson pupils</td>
</tr>
</tbody>
</table>

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National Trends

• 2018 marked the highest number of early syphilis cases reported since 1991 (over 115,000).
• Women make up 14% of syphilis cases in the US (2018).
• Congenital Syphilis cases increased 261% from 2013-2018 (362 to 1306 cases).
• Case rate from 11.6/100,000 in 2014 to 33.1 in 2018
• Nationally, the most commonly missed opportunities for prevention of congenital syphilis are a lack of adequate maternal treatment despite timely diagnoses of syphilis and a lack of timely prenatal care, followed by late identification of seroconversions.
Syphilis in Idaho 2010-2019

% of syphilis among women

16.2 %
23.3 %

2010-2014  2015-2019

Number of reported cases

Year of report

Late/unk duration syphilis
Congenital syphilis
Early syphilis*
Proportion of syphilis cases by sex and Public Health District—Idaho, 2015–19

<table>
<thead>
<tr>
<th>District</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Panhandle</td>
<td>30%</td>
<td>11%</td>
</tr>
<tr>
<td>North Central</td>
<td>11%</td>
<td>11%</td>
</tr>
<tr>
<td>Southwest</td>
<td>24%</td>
<td>24%</td>
</tr>
<tr>
<td>Central</td>
<td>20%</td>
<td>20%</td>
</tr>
<tr>
<td>South Central</td>
<td>33%</td>
<td>33%</td>
</tr>
<tr>
<td>Southeastern</td>
<td>26%</td>
<td>26%</td>
</tr>
<tr>
<td>Eastern</td>
<td>13%</td>
<td>13%</td>
</tr>
</tbody>
</table>
Recent Congenital Syphilis Stories

• There were 3 congenital syphilis cases reported during 2015-to date: 1 in 2018 and 1 under investigation for 2019, 1 in 2020.

• The 2018 congenital syphilis case was in an infant born to a 40-44 year old resident of PHD5. The mother was asymptomatic and had a low titer. She did not recollect her partner having symptoms; the partner was difficult to contact and was ultimately classified as a case of late/unk duration syphilis. A provider hand-off occurred between two providers while stage was being determined and the full 3 weekly treatments were not completed.

• The 2019 case in an infant born to a 22 year old resident of PHD3. Like the PHD5 case, the mother received an initial 1x treatment at about 16 weeks but in this case, the PHD3 epi stressed 3x weekly treatment for the appropriate stage and it was completed. Follow-up syphilis decreased to non-reactive in the third trimester but increased to a level indicative of re-infection or treatment failure on a test drawn at delivery.
A look at 2020 so far

- There have been 77 cases of syphilis and 1 congenital syphilis case reported in Idaho during the first 6 months of 2020.
- 20 (26%) were among persons reported as women.
- 18 (90%) were women were of childbearing age (15-44 years), and over half of women with syphilis during this time period were under 30 years of age.
- Median age was 29.0 years among women.
- There have been 4 women in 2020 reported as pregnant. Median age of these women was 22.5 years. Three have delivered and none so far have been reported as congenital infection.
Syphilis in Pregnancy

• Vertical Transmission can happen at any point in disease or pregnancy
  – Primary and secondary – 50%
  – Early latent – 40%
  – Late latent and early tertiary 10%
• Earlier gestational age associated with poorer outcomes
  – 25% of affected pregnancies end with Intrauterine demise/miscarriage/stillbirth
  – Congenital Syphilis:
    • neonatal death
    • Asymptomatic
• Nontreponemal titer associated with outcomes
  – Titers >1:8 transmission rate 25%
  – Titers <1:8 transmission rate 4%
• Appropriate treatment in pregnancy improves outcomes by a factor of 12
  – Before 28 weeks best –
  – at least 30 days prior to delivery
Syphilis in Pregnancy

• Prenatal Care and early serum screening paramount
  – CDC 2015 report of congenital syphilis cases
    • No prenatal care for 22%
    • At least one PN visit – 78%
      – 43% no treatment
      – 30% inadequate treatment
• No ultrasound findings before 20 weeks
• Repeat screening 28 weeks and at delivery
• High risk
  – High prevalence communities
  – HIV patients
  – Incarceration history
  – Commercial Sex Work
  – Exposure to infected partner
Congenital Syphilis

Ultrasound findings

- Hepatomegaly
- Fetal Anemia
- Placentomegaly
- Polyhydramnios
- Fetal Hydrops
  - Ascites
  - Pericardial effusion
- Cardiomegaly
- Splenomegaly
Treatment

• Benzathine penicillin G 2.4 million units IM x 1
  – No accepted alternatives at this time
  – Penicillin allergy requires desensitization
• Three doses no more than 7 days apart if:
  – Latent
  – Unknown duration
  – Reinfection
• Monitor for Jarisch-Herxheimer (JH) reaction
  – Endotoxin and lipoprotein inflammatory response
• Monitor for adequate treatment - monthly
  – Nontreponemal titers (4 fold decrease optimal)
• Make sure partner is treated!!
Key Points

• Idaho has a rising trend with syphilis, including infections among women of childbearing age
• Public health districts help ensure treatment and follow up with individuals diagnosed with syphilis
• Prenatal care access and adequate screening are important for earliest diagnosis
• Adequate treatment and monitoring make significant changes in outcome
• Consider repeat testing in third trimester
References


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