Sexual Health in the 21st Century:

“You have what?!”

Faculty

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Objectives

At the conclusion of this presentation the participant will:

• Verbalize risk factors in current patient populations for STIs

• Demonstrate ability to utilize risk assessment, risk reduction and screening in current practice

• Utilize appropriate diagnostic & treatment guidelines for management of STIs
Sexually Transmitted Infections

- Chlamydia
- Gonorrhea
- Syphilis
- HPV
- HSV
- Hepatitis C
- HIV

Gonorrhea/Chlamydia (GC)

- Chlamydia is caused by the bacterium, *Chlamydia Trachomatis*, and Gonorrhea is caused by *Neisseria Gonorrhoeae*
- Both can damage a woman’s reproductive organs
- Can cause discharge from the penis of an infected man
- Can be transmitted during vaginal, anal, or oral sex.
- GC can also be passed from an infected mother to her unborn child during vaginal delivery
- CDC estimates that more than 700,000 persons in the U.S. get new G/C infections each year, of which only have get reported.
Symptoms

- Known as a "silent" disease because the majority of infected people have no symptoms
- Women who have symptoms might have an abnormal vaginal discharge or a burning sensation when urinating
- Men with signs or symptoms might have a discharge from their penis or a burning sensation when urinating
- Untreated infection can spread into the uterus or fallopian tubes and cause pelvic inflammatory disease (PID).

Screening

- Screening at least annually for Chlamydia is recommended for all sexually active women age 25 years and younger.
- Annual screening test also is recommended for older women with risk factors for Chlamydia (a new sex partner or multiple sex partners).
- All pregnant women should have a screening test for Chlamydia.
- Diagnostic testing is performed on urine, other tests require that a specimen be collected from a site such as the penis or cervix.

Treatment

- Easily treated and cured with antibiotics. A single dose of Azithromycin or a week of Doxycycline (twice daily) are the most commonly used treatments.
- Should abstain from sexual intercourse for 7 days after single dose antibiotics or until completion of a 7-day course of antibiotics, to prevent spreading the infection to partners.
- Should be retested about three months after treatment of an initial infection, regardless of whether they believe that their sex partners were treated.
Anogenital GC Treatment

• **Recommended**
  – Ceftriaxone 250 mg IM (preferred) PLUS Azithromycin 1 gm or Doxycycline 100 mg bid x 7
  – Cefixime 400 mg PO (if Ceftriaxone is not an option) PLUS Azithromycin 1 gm or Doxycycline 100 mg bid x 7

• **Alternatives**
  – Cefpodoxime 400 mg or cefuroxime axetil 1 g
  – Azithromycin 2 g (penicillin allergy)

Syphilis

• Easy to cure in its early stages.
• Caused by the bacterium *Treponema pallidum*
• In 2008, 63% of the reported primary and secondary (P&S) syphilis cases were among men who have sex with men (MSM).
• During 2004–2008, rates of P&S syphilis increased the most among 15–24 year-old men and women.

Primary and Secondary Syphilis—Rates by Age and Sex, United States, 2009
Symptoms

- Signs and symptoms of syphilis include a firm, round, small, and painless sore on the genitals, anus, or mouth, or a rash on the body, especially on the palms of the hands or the soles of the feet.
- Many people infected with syphilis do not have any symptoms for years.
- Classified as Primary, Secondary or Tertiary.

Primary Syphilis

- Usually marked by the appearance of a single sore (called a chancre), but there may be multiple sores.
- Time between infection with syphilis and the start of the first symptom can range from 10 to 90 days (average 21 days).
- Appears at the spot where syphilis entered the body
- Chancre lasts 3 to 6 weeks, and it heals without treatment.
- If adequate treatment is not administered, the infection progresses to the secondary stage.
Secondary Syphilis

• Typically starts with the development of a rash on one or more areas of the body & does not cause itching.
• Characteristic rash of secondary syphilis may appear as rough, red, or reddish brown spots both on the palms of the hands and the bottoms of the feet.
• May include fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue.
• Without treatment, the infection will progress to the latent and possibly late stages of disease.

Tertiary Syphilis

• Can last for years, & can appear 10–20 years after infection was first acquired.
• Can develop in about 15% of people who have not been treated for syphilis.
• Subsequent damage of the internal organs, including the brain, nerves, eyes, heart, blood vessels, liver, bones, and joints.
• Damage may be serious enough to cause death.
• Difficulty coordinating muscle movements, paralysis, numbness, gradual blindness, and dementia.
Screening

- Examining material from a chancre (infectious sore) using a special microscope called a dark-field microscope
- Venereal disease research laboratory (VDRL) test - test is sometimes not accurate
- Rapid plasma reagin (RPR) test
- Enzyme immunoassay (EIA) test - should be confirmed with either the VDRL or RPR tests
- Fluorescent treponemal antibody absorption (FTA-ABS) test - can be used to detect syphilis except during the first 3 to 4 weeks after exposure to syphilis bacteria
- Treponema pallidum particle agglutination assay (TPPA) - can be used to detect syphilis in all stages, except during the first 3 to 4 weeks
- Dark field microscopy - used mainly to diagnose syphilis in an early stage

Treatment

- Single intramuscular injection of Benzathine Penicillin 2.4 mu IM x 1 - will cure a person who has had syphilis for less than a year
- Additional doses are needed to treat someone who has had syphilis for longer than a year
- PCN Allergies - Doxycycline, Ceftriaxone
- Azithromycin 2 gm (resistance/treatment failure)
  - Use only when Penicillin or Doxycycline not feasible
  - Do not use in MSM or pregnancy

Human Pappiloma Virus

- Most common sexually transmitted infection (STI)
- There are over 40 HPV types
- Not the same as herpes or HIV
- Most people who become infected with HPV do not even know they have it.
- Approximately 20 million Americans are currently infected with HPV. Another 6 million people become newly infected each year. HPV is so common that at least 50% of sexually active men and women get it at some point in their lives.
- In 90% of cases, the body’s immune system clears HPV naturally within two years
Prevalence Among Sexually Transmitted Disease (STD) Clinic Patients by Sex, Sex of Partners, and Site, STD Surveillance Network, 2009

Symptoms

- Usually appear as a small bump or group of bumps in the genital area.
- Can be small or large, raised or flat, or shaped like a cauliflower.
- Can appear within weeks or months after sexual contact with an infected partner.
- Cervical cancer usually does not have symptoms until it is quite advanced.
- RRP is a condition in which warts grow in the throat. These growths can sometimes block the airway, causing a hoarse voice or troubled breathing.
Treatment

- No single treatment is ideal for all patients or all warts.
- Immunosuppression and compliance with therapy affect response to treatments.
- Most genital warts respond within 3 months of therapy.
- Consists of either a single treatment or a complete course of treatment.

Topical Therapy

- **Patient-Applied:**
  - *Podophlox* 0.5% solution or gel (antimitotic drug)
  - *Imiquimod* 5% cream (topically active immune enhancer)
  - *Sinecatechins* 15% ointment (green-tea extract)
- **Provider-Administered:** green-tea extract
  - *Cryotherapy* with liquid nitrogen or cryoprobe. Repeat applications every 1–2 weeks.
  - *Podophyllin* resin 10%–25% in a compound tincture of benzoin
  - *Trichloroacetic acid (TCA)* or *Bichloroacetic acid (BCA)* 80%–90%
  - *Surgical removal* either by tangential scissor excision, tangential shave excision, curettage, or electrosurgery.

Prevention

- Two HPV vaccines are available, both of which offer protection against the HPV types that cause 70% of cervical cancers (i.e., types 16 and 18)
- Quadrivalent vaccine (Gardasil) also protects against the types that cause 90% of genital warts (i.e., types 6 and 11). These vaccines are most effective when all doses are administered before sexual contact.
  - Either vaccine is recommended for 11- and 12-year-old girls and for females aged 13–26 years who did not receive or complete the vaccine series when they were younger. The quadrivalent HPV vaccine can be used in males aged 9–26 years to prevent genital warts.
Herpes Simplex Virus (HSV)

- Caused by the herpes simplex viruses type 1 (HSV-1) or type 2 (HSV-2).
- Most genital herpes is caused by HSV-2.
- More common in women
- Although the infection can stay in the body indefinitely, the number of outbreaks tends to decrease over a period of years.
- 16.2%, or about one out of six, people 14 to 49 years of age have genital HSV-2 infection
- HSV-1 can cause genital herpes but more common on lips and mouth.

Symptoms

- If signs and symptoms occur during the first outbreak, they can be quite pronounced.
- Usually occurs within two weeks after the virus is transmitted.
- Sores typically heal within two to four weeks.
- Primary episode may include a second crop of sores, and flu-like symptoms, including fever and swollen glands.
- Individuals with a first episode of genital herpes can expect to have several (typically four or five) outbreaks (symptomatic recurrences) within a year.
Treatment

- No treatment can cure herpes.
- Antiviral medications can shorten and prevent outbreaks.
- Daily suppressive therapy for symptomatic herpes can reduce transmission to partners.
- Abstain from sexual activity with uninfected partners when lesions or other symptoms of herpes are present.
- Analgesics can be for pain.
- Topical Anesthetics for itching/pain.

Recommended Regimes

- Acyclovir 400 mg orally three times a day for 7–10 days
- Acyclovir 200 mg orally five times a day for 7–10 days
- Famciclovir 250 mg orally three times a day for 7–10 days
- Valacyclovir 1 g orally twice a day for 7–10 days

*Treatment can be extended if healing is incomplete after 10 days of therapy.

Hepatitis C

- Primary source for infection is blood to blood.
- Sexual transmission risk increases with number of sexual partners.
- Symptoms may be silent but can include a host of physical complaints and at times, abnormalities in lab studies
- Diagnosis: Hep C antibody. If positive, HCV RNA for confirmation and ongoing viral activity.
- Treatment recommendations consists of identification of genotype, antiviral & IL28B genetic polymorphism and immuno therapy.
- Success rates vary depending on genotype & allele.
Proposed classification system for the treatment of hepatitis C virus in the direct-acting antiviral era

Class I: treatment naïve, IT, G2/3, G1 low viral load, and/or CC allele (20–25% of US patients)

Class II: treatment naïve, IT, G1 high viral load, or CT/TT allele (40–50% of US patients)

Class III: G1/4 and G2/3 relapsers and nonresponders to current standard of care who become RNA undetectable by week 12 of treatment (20% of US patients)

Class IV: Class IIIs who do not become undetectable by week 12, interferon-intolerant patients and all treatment failures from treated Classes I–III (30% of US patients assuming 5% from Classes I and III, and 10% from Class II)

Treatment durations, sustained virologic response rates, and expected costs

<table>
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<th>PI+SOC×24 weeks</th>
<th>PI+SOC×48 weeks</th>
<th>PI+NS5B pol+other agents</th>
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<td>80%</td>
<td>70–75%</td>
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<td>Cost</td>
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<td>&lt;$50,000*</td>
<td>&gt;$50,000 but &lt;$100,000*</td>
<td>&lt;$100,000*</td>
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Human Immunodeficiency Virus (HIV)

- The number of people living with HIV infection in the United States (HIV prevalence) is higher than ever before.
- CDC has estimated that more than 1 million (1,178,350) adults and adolescents were living with HIV infection in the United States at the end of 2008, the most recent year for which national prevalence estimates are available.
- This represents an increase of approximately 7% from the previous estimate in 2006 [1]. The increase is due to a higher number of people becoming infected with HIV than the number of people who die each year with HIV or AIDS.
- CDC estimates that there were 5 transmissions per 100 persons living with HIV infection in the United States in 2006.
- HIV disproportionately affects certain populations. Men who have sex with men (MSM), blacks/African Americans, and Hispanic/Latinos are the groups most affected by HIV infection.
Symptoms

- HIV infection represents a spectrum of disease that can begin with a brief acute retroviral syndrome that typically transitions to a multyear chronic and clinically latent illness. Without treatment, this illness eventually progresses to a symptomatic, life-threatening immunodeficiency disease known as AIDS.
- Many people do not develop any symptoms when they first become infected with HIV. Some people, however, get a flu-like illness within three to six weeks after exposure to the virus. This illness, called Acute HIV Syndrome, may include fever, headache, tiredness, nausea, diarrhea and enlarged lymph nodes (organs of the immune system that can be felt in the neck, armpits and groin). These symptoms usually disappear within a week to a month and are often mistaken for another viral infection.

Testing

- Initial screen: Elisa
- Confirmatory (hallmark): Western Blot
- Point of Care Testing (oral, urine, blood)
- HIV Viral Load
- Genotype/Phenotyping

Treatment Options

- Based on Department of Health & Human Services (DHHS) Guidelines.
  - Selection of a regimen should be individualized based on patient preference, virologic efficacy, toxicity, pill burden, dosing frequency, drug-drug interaction potential, resistance-testing results, and co-morbid conditions.
- Currently six classes of antiretroviral therapy, usually three drugs are used in combination.
Sexual Risk Assessment

- Learning to talk openly to your patient
  - Make sure that your verbal and physical cues are nonjudgmental
  - Speak in language that “THEY” understand
  - Provide reassurance, not false hope
  - Reinforce opportunities for better health
  - Utilize a consistent tool that becomes a normal part of your practice

Useful tool questions

References

- Infectious Disease Epidemiology, Prevention and Control Division STD and HIV Section P.O. Box 64975 625 Robert Street North St. Paul, Minnesota 55164-0975
- Morbidity and Mortality Weekly Report, December 17, 2010 / Vol. 59 / No. RR-12