INDIAN HEALTH SERVICE
National Pharmacy and Therapeutics Committee
Formulary Brief: ***Sexually Transmitted Infections, Part III***
-August 2022-

Background:

The Indian Health Service (IHS) National Pharmacy and Therapeutics Committee (NPTC) provided a third in a series of recent reviews of Sexually Transmitted Infections (STIs) at the Summer 2022 meeting. This review included a revisit of syphilis, congenital syphilis, children & STIs, adolescence & STIs, pregnancy & STIs, bacterial vaginosis, Human Papilloma Virus (HPV)-anogenital warts, molluscum contagiosum, pediculosis pubis, scabies, the ulcerative STIs of chancroid, granuloma inguinale, lymphogranuloma venereum and hepatitis. Focus was given to clinical guidelines and recommended therapies. Following review and deliberation, the NPTC voted to **ADD (1) permethrin 5% cream** and **(2) permethrin 1%, any formulation to the NPTC formulary.**

Discussion:

STIs are a global problem with >1 million cases acquired daily. In the United States, there are 19.7 million new STIs reported annually and 1 in 2 sexually active persons will acquire an STI/STD by age 25. Appropriate testing and treatment is essential. Guidelines from the U.S. Centers for Disease Control and Prevention (CDC) were updated in 2021 which formed the basis of this review.[1,2,3]

Clinical Practice Guidelines for the following 12 STIs/categories were reviewed and are detailed below:

Syphilis: Preliminary 2021 statistics show increases in syphilis cases in both males and females to 22.6 cases and 6.4 cases/100,000, respectively. Preferred treatment continues to be penicillin formulations for the different risk categories.[4]

Congenital Syphilis: Data from 2021 show a 6% increase in congenital syphilis cases with a 7% increase in stillborn and infant deaths, These rates mirror the rise of syphilis in pregnant women.[4] Significant race and ethnicity disparities persist with American Indian/Alaskan Natives reporting the highest rate with 277 cases/100,000 live births.[5] The American Academy of Pediatrics states "No newborn infant should be discharged from the hospital without determination of the mother's serologic status for syphilis".[6] All infants whose mother has a positive syphilis test require evaluation for congenital syphilis, determination of risk category, appropriate treatment and follow-up.[8] After the neonatal period, congenital syphilis presents with diverse manifestations in which testing and treatment are indicated.[9] The inclusion of aqueous crystalline penicillin should be considered on local formularies at all IHS inpatient facilities that have the ability to treat neonates with congenital syphilis.

Children & STIs: No recommended screening. STIs found after the neonatal period are concerning for sexual contact. Different infections denote different probabilities of sexual contact.[10] Mandated reporting per guideline to state/tribe.

Adolescence & STIs: Certain STIs are more prevalent during adolescence. Screening of asymptomatic sexually active adolescents is recommended. Primary prevention with HPV, hepatitis A and hepatitis B immunizations and discussion of condom usage is recommended.[11] Currently, all states allow adolescents to consent for STI services without parental consent, although ages may vary between states.[12] Staff should become familiar with their state's consent laws.

Pregnancy & STIs: Screening for STIs is recommended; states require different testing at various times during the pregnancy.[13] Of particular concern is the rising rate of syphilis in pregnant females and, hence, a rising rate of congenital syphilis. All pregnant women should be screened for syphilis. Treatment with penicillin is 98% effective in preventing congenital syphilis. Treatment of STIs in pregnancy varies from the adult recommendations only in the treatment of Chlamydia. Pregnant patients should use azithromycin 1 gram orally x1 dose for Chlamydia.

Bacterial Vaginosis (BV): BV results from a change in the normal flora resulting from the loss of protective *Lactobacillus* species and resultant overgrowth of normal vaginal anaerobic species. The cause of this microbial change in not fully understood. Symptomatic BV increases the risks of acquiring other STIs and contributes to adverse pregnancy outcomes. Symptomatic women should be assessed for BV and other STIs and treated if present. Asymptomatic women, both pregnant and non-pregnant, should not be screened or treated for BV.[14,15]

HPV-Anogenital Warts: HPV is the most common STI with 13 million new cases yearly in the U.S. HPV vaccination began in 2006; since that time HPV infections that cause cervical cancers and anogenital warts have decreased 88% in teen girls and 81% in young adult women.[16] Treatment of anogenital warts is varied, and dependent on size, number and anatomical location of lesions. No recommended treatment is superior.[17]

Molluscum Contagiosum: Benign condition caused by dermatotrophic poxvirus; this virus in non-lethal, common and resides only in the epidermis. It is spread by skin contact, fomites and self-inoculation. It is most common in pediatrics and not considered an STI. Sexually active adults may spread molluscum contagiosum during skin-to-skin contact. Patients with AIDS and/or immunocompromised states may have diffuse and recalcitrant eruptions. Observation is an appropriate trial. If treatment is required, the modes are varied with no preferred treatment.[18,19,20]

Pediculosis Pubis: Parasitic infestation of the lice *Phthirus publis* spread by skin-to-skin contact, and not responsible for spread of disease. Recommended treatment with permethrin 1% of both patient and partner.[21]

Scabies: Infestation of the mite *Sarcoptes scabiei* spread by skin-to-skin contact or through bedding/clothing. This is not responsible for spread of disease. Recommended treatment with permethrin 5% cream.[22]

Diseases characterized by Genital, Anal or Perianal Ulcers: This category includes genital herpes, syphilis, chancroid, granuloma inguinalae, lymphogranuloma venereum and other non-STI genital sores. Genital herpes (the most common) and syphilis were discussed in a prior NPTC Formulary Brief. Chancroid, granuloma inguinale and lymphogranuloma venereum (LGV) are rare in the U.S., however LGV is increasing in men who have sex with men as proctocolitis. Initial evaluation of ulcers includes assessment for syphilis and herpes simplex type 1 or 2; an examination may indicate which is more likely. Presumptive treatment prior to test results is recommended for both syphilis and/or herpes simplex. In settings where chancroid (*Haemophilus ducreyi*) is prevalent, a nucleic acid amplification test or culture should also be done. Unusual ulcers, ulcers not responsive to treatment, and ulcers with lymphadenopathy should be further assessed for chancroid, granuloma inguinalae or LGV and appropriate antibiotic treatment prescribed.[23,24]

Hepatitis: Hepatitis types A, B and C can all be transmitted sexually, however this mode of transmission is rare for hepatitis A and C. Hepatitis A and B can be prevented with immunization. Hepatitis B can be self-limiting or chronic. Between 5-30% of Hep B patients develop cirrhosis whereas ~1% will result in acute liver failure and death. [25,26]

Barrier Protection:

Barrier protection (condoms and female condoms) should be easily and readily available for distribution to sexually active patients in a discreet manner, along with appropriate education regarding proper use.

Findings:

STIs are increasing worldwide and can have significant morbidity and mortality if untreated. Physicians and other health care providers have a crucial role in preventing and treating STIs. The CDC guidelines are intended to assist with treatment, prevention and diagnosis. Providers should consider the clinical circumstances of each person in the context of local disease prevalence. Review of the 2021 STI Guidelines has been completed by the NPTC in a three-part series. In this third installment, focus was given to 12 STIs/conditions not addressed previously. A review of clinical guidelines and recommended therapies for each was completed, at which time the NPTC voted to add permethrin 5% cream and permethrin 1% to the National Core Formulary. Barrier protection (condoms and female condoms) should be easily and discreetly available.

References:

1. std-gov.org. Curable (Treatable) and Incurable STDs: List of STDs. Accessed July 2022.
2. U.S. Centers for Disease Control and Prevention. STD Data and Statistics. Accessed July 2022.
3. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021. Accessed July 2022.
4. U.S. Centers for Disease Control and Prevention. Preliminary 2021 Data: Syphilis. Accessed July 2022.
5. U.S. Centers for Disease Control and Prevention. Health Disparities: American Indians and Alaska Natives. Accessed July 2022.
6. American Academy of Pediatrics. Syphilis: Red Book: 2021–2024 Report of Committee on Infectious Diseases. Accessed July 2022.
7. American Academy of Pediatrics. Syphilis: Red Book: 2021–2024 Report of the Committee on Infectious Diseases figure 3.15. Accessed July 2022.
8. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Congenital Syphilis. Accessed July 2022.
9. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021, pg. 55. Accessed July 2022.
10. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Children. Accessed July 2022.
11. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Adolescents. Accessed July 2022.
12. U.S. Centers for Disease Control and Prevention. HIV/AIDS. Minors' Consent Laws. Accessed July 2022.
13. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines: Pregnant Women.
14. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Bacterial Vaginosis. Accessed July 2022.
15. Kairys N, Garg M. Bacterial Vaginosis. StatPearls [Internet]. Last Updated July 4, 2022.
16. U.S. Centers for Disease Control and Prevention. Human papillomavirus: Genital HPV Infection – Basic Fact Sheet. Accessed July 2022.
17. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Anogenital Warts. Accessed July 2022.
18. U.S. Centers for Disease Control and Prevention. Molluscum Contagiosum. Accessed July 2022.
19. Badri T, Gandhi GR. Molluscum Contagiosum. StatPearls[Internet]. Last Updated: May 1, 2022.
20. American Academy of Dermatology. Molluscum contagiosum: Diagnosis and treatment. Accessed July 2022.
21. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Ectoparasitic Infections. Accessed July 2022.
22. U.S. Centers for Disease Control and Prevention. STIs–Summary of CDC Treatment Guidelines, 2021. Accessed July 2022.
23. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021, pgs. 27-39. Accessed July 2022.
24. Shen LY. Resident Rounds. Part II. Sexually Transmitted Genital Ulcers. J Drugs Dermatol. 2013; 12(11):1289.
25. U.S. Centers for Disease Control and Prevention. STI Treatment Guidelines, 2021: Viral Hepatitis. Accessed July 2022.
26. U.S. Centers for Disease Control and Prevention. Viral Hepatitis. Accessed July 2022