SEXUALLY TRANSMITTED INFECTIONS

Resident Author: Michelle Lam, MD
Faculty Advisor: Marcus Law, MD, MBA, CCFP
Created: December 2011

Family & Community Medicine
UNIVERSITY OF TORONTO

Overview

It is important to assess the level of risk for each patient, and educate regarding sexual health in routine care. Risk factors: sexual contact with person(s) with known STI, sexually active <25 y.o., new sexual partner or >2 partners in last year, serial monogamy, no contraception or sole use of non-barrier methods, injection drug or other substance use, sex workers, homelessness, victims of sexual abuse, previous STI.[1]

Diagnostic Considerations/Screening

Diagnosis	Epidemiology	Symptoms & signs	Major sequelae	Investigations	Management
Chlamydia (reportable)	Most common bacterial STI Commonly affects females 15-24, males 20-29[1] Often co-infection with gonorrhea (20-42%)[2]	**Females:** Often asymptomatic, cervicitis, vaginal discharge, dysuria, lower abdominal pain, abnormal vaginal bleeding dyspareunia, conjunctivitis **Males:** Often asymptomatic, urethral discharge, urethritis, urethral itch, dysuria, testicular pain, conjunctivitis	**Females:** PID, infertility, ectopic pregnancy,chronic pelvic pain, Reiter syndrome **Males:**Epididymo-orchitis, Reiter syndrome	Culture preferred; urine NAAT if pelvic exam not warrantedor asymptomatic; conjunctival, oropharyngeal, rectal swabs as required **Females and males of any age:**first-catch urine NAAT **Females:** cervix, vaginal, or rectal swab **Males:** urethral swab (preferably have not voided for at least 2h)	Azithromycin 1 g PO X 1 dose Doxycycline 100 mg PO bid X 7d **Alt:** Ofloxacin 300 mg PO bid X 7d Erythomycin 500mg QID X7d or 250mg QIDX 14d Empirical rxfor N. gonorrhoeae due to high chance of co-infection
Gonorrhea (reportable)	2nd most common bacterial STI. 2/3 in males. Increased in MSM. Most commonly affects women 15-24, men 20-29[1], HIV transmission is enhanced in people with concomitant gonococcal infections[3]	**Females:** Vaginal discharge, dysuria, abnormal vaginal bleeding, lower abdominal pain, rectal pain and discharge if proctitis, deep dyspareunia **Males:** Urethral discharge, dysuria, urethral itch, testicular pain, swelling, rectal pain and discharge if proctitis	**Females:** PID, infertility, ectopic pregnancy, chronic pelvic pain, Reiter syndrome, disseminated gonococcal infection **Males:** Epididymo-orchitis, Reiter syndrome, infertility (rare), disseminated gonococcal infection	**Females:** cervix in young and adult females; vagina in prepubertal females; rectal **Males:** urethral swab, rectal (MSM) Pharyngeal, conjunctival swabs as required Culture whenever possible – allows for antimicrobial susceptibility testing. First-catch urine NAATs if pelvic exam or urethral swab refused	Cefixime 800mg PO X 1 dose **Alt:** Ceftriaxone 250 mg IM X 1 dose Azithromycin 2 g PO X 1 dose Ciprofloxacin 500 mg PO X 1 dose Ofloxacin 400 mg PO X 1 dose Empirical rx for C. trachomatis due to high chance of co-infection; Quinolone resistance increasing
Genital herpes HSV-1 & 2 Seroprevalence rates > 20% Most transmission by asymptomatic shedding (not reportable)	Commonly affects adolescent and adult men and women, W > M Genital herpes increases risk of acquisition of HIV twofold	Cluster of vesicles on an erythematous background is diagnostic **Primary infection:** extensive painful vesiculoulcerative genital lesions, systemic symptoms (fever, myalgia), tender lymphadenopathy, longer course **Non-primary infection:** symptoms and signs less severe than primary infection **Recurrent disease:** associated with physical or emotional stress; localized small painful lesions +/- prodrome		Culture most commonly used	**1st episode:** Valacyclovir 1000 mg PO bid X 10d Famciclovir 250 mg PO tid X 5d Acyclovir 200mg PO five times a day X 5-10d **Recurrent episodes:** Valacyclovir 500 mg PO bid or 1000 mg od X 3d Famciclovir 125 mg PO bid X 5d Acyclovir 200 mg PO 5 times a day X 5d **Suppressive therapy (for recurrences at least q2months or 6 times/yr):** Valacyclovir500 mg PO od (for ≤ 9 times/yr), 1000 mg od (for > 9 times/yr) Famcyclovir250 mg PO bid Acyclovir 400 mg PO bid

Dr. Michael Evans developed the One-Pager concept to provide clinicians with useful clinical information on primary care topics.

Genital human papilloma virus(HPV) **Types 6, 11:**90% of genital warts **Types 16, 18:** 70% precancerous lesions (not reportable)	Commonly affects adolescents and young adults 70% of adults will have had at least one genital infection over lifetime	Mostly asymptomatic **Sites:** cervix, vagina, vulva, anus, penis **Natural hx:** fluctuation in size and number of warts, usually eventual clearance Vaccine for all females in Grade 8 (Ont.); recommended for females 9-45, males 9-26	**PAP:** Low grade squamous intraepithelial lesions; High grade squamous intraepithelial lesions; Carcinoma in situ; Invasive carcinoma **External genital warts:**exophytic cauliflower-like/ papular growths on anogenital skin/ mucous membranes (condylomatacuminata)	Pap smear/test, colposcopy, suspicious lesions may require biopsy	**No therapy guarantees** eradication Cell-mediated immunity eradicates most infections in teens and young adults **Genital warts:** Imiquimod – 3X/week Podofilox – q12h X 3d Podophyllin Cryotherapy
Trichomonasvaginalis (reportable in some areas)		Vaginal discharge, itch, dysuria, off-white/yellow frothy discharge, erythema of vulva & cervix, 10-50% asymptomatic	Associated with increased risk of HIV acquisition and transmission in women	Speculum exam, vaginal culture; motile trichomonads on wet mount are diagnostic	Metronidazole 2 g PO X 1 dose or 500 mg PO bid X 7d Treat partner with same therapy

Less Common Sexually Transmitted Infections

Diagnosis	Epidemiology	Course / Prevention	Symptoms & signs	Investigations	Management
Infectious syphilis (reportable)	Commonly affects MSM aged 30-39, sex workers and clients Increases risk of acquisition and transmission of HIV Main mode of transmission by vaginal, anal and oral sexual contact	Primary, secondary and early latent stages are infectious Direct contact with lesions of primary and secondary syphilis have the greatest risk of transmission[4]	**Primary:** chancre, lymphadenopathy **Secondary:** rash, fever, malaise, lymphadenopathy, mucus lesions, condylomalata, alopecia, meningitis, headaches, uveitis **Latent:** aymptomatic **Tertiary:** CV (aortic aneurysm/ regurgitation), neurosyphilis (asymptomatic, headaches, vertigo, personality changes, dementia, ataxia, Argyll Robertson pupil)	VDRL; Treponemal specific enzyme immunoassay (EIA) more sensitive; dark-field microscopy of material from primary or secondary lesions	**Primary/secondary/ early latent:** Benzathine penicillin G 2.4 million units IM X 1 dose **Late latent syphilis, latent syphilis of unknown duration, cardiovascular syphilis:** Benzathine penicillin G 2.4 million units IM weekly X 3 doses **Neurosyphilis:** Penicillin G 3-4 million units IV q4h X 10-14d
Hepatitis B (HBV) Infection (reportable)	Most common cause of sexually transmitted hepatitis **Routes of transmission:** percutaneous (IV drugs), sexual, horizontal via household contacts, vertical from mother to neonate **Risk factors:** injection drug use, multiple heterosexual sex partners, MSM, sex with HBV-infected individuals, hepatitis B carrier in family	Harm-reduction **Primary prevention:** vaccine for children in Grade 7 (Ont.); recommended for children 9-13y, other risk groups **Secondary prevention:** Hep B immune globulin (HBIG) then Hep B vaccine for needlestick injury ≤7d after exposure; sexual contacts ≤14d; Infants of HBV-infected mothers,HBIG after birth and 1st dose of vaccine within 12h	50-70% asymptomatic; fatigue, nausea, vomiting, anorexia, rash, arthralgia, icterus	Serologic markers HBsAg(acute infection); Anti HBs (previous vaccination)	No indication for antivirals in acute Hep B Refer to an expert for management

Management Consideration

Pharmacotherapy

Drug	Contraindications	Adverse Effects	Comments
Macrolides (azithromycin, erythromycin)	Hypersensitivity, history of cholestatic jaundice or hepatic dysfunction	GI: diarrhea, nausea, abdo pain Derm: pruritis, rash GU: vaginitis	Azithro<<Erythro for A/E and DI Check all drug interactions if using erythromycin
Doxycycline	Hypersensitivity, < 8y.o., pregnancy	GI: diarrhea, dyspepsia	
Fluoroquinolones (ofloxacin, ciprofloxacin)	Hypersensitivity, safety in pregnancy not established, breastfeeding	Cardiac: prolonged QT CNS: tremor, restlessness, confusion MSK: tendon inflammation, rupture(rare)Derm: photosensitivity	Consider dosage adjustment in renal impairment (CrCl<30ml/min)
Cephalosporins (cefixime, ceftriaxone)	Hypersensitivity*	GI: diarrhea, nausea, dyspepsia, abdo pain	

Penicillin	Hypersensitivity*	GI: diarrhea, nausea, vomiting, oral candidiasis	
Metronidazole	Hypersensitivity, 1st trimester	GI: nausea	PO form to treat STIs; intravaginalform not effective No alcohol for duration + 3 days after (disulfiram-rxn)
Antivirals (acyclovir, valacyclovir, famciclovir)	Hypersensitivity Dose adjustment if CrCl<60ml/min	CNS: headache GI: nausea, vomiting, diarrhea	Rx for HSV should be started asap following onset of signs and symptoms; daily valcyclovir can reduce HSV-2 transmission by 48%[5]

*Cross-sensitivity between peniciilins and cephalosporins estimated at 1%, with highest likelihood of cross-reaction with first-generation cephalosporins

Reportable diseases and trace-back periods

All partners who have had sexual contact with the index case within 60 days prior to symptom onset or specimen collection should be tested and empirically treated

The trace-back period is the time period prior to symptom onset or date of specimen collection

- Includes additional time up to date of treatment
- If index case states there were no partners during recommended trace-back period, then last partner should be notified
- If all partners in recommended trace-back period test negative, then partners prior to trace-back period should be notified

Online resources

1. Canadian Guidelines on Sexually Transmitted Infections: http://www.phac-aspc.gc.ca/std-mts/sti-its/guide-lignesdir-eng.php
2. National Notifiable Diseases, Public Health Agency of Canada: http://dsol-smed.phac-aspc.gc.ca/dsol-smed/ndis/list-eng.php
3. Sexuality and U: http://www.sexualityandu.ca/

References can be found online at http://www.dfcm.utoronto.ca/programs/postgraduateprograme/One_Pager_Project_References.htm