

Syndromic Management of Sexually Transmitted Infections

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SYNDROMIC MANAGEMENT OF SEXUALLY TRANSMITTED INFECTIONS

Syndromic Approach

Diagnosis of a syndrome according to standard criteria predicts the likelihood that a specific pathogen or pathogens is/are present and thus facilitates initiation of appropriate empiric treatment at the first visit rather than deferring treatment until there is microbiological confirmation. In the context of variable access to laboratory testing and variable rates of follow-up, the syndromic approach takes on greater relevance in controlling transmission and negative sequelae. See *Table 1*, below, for the management of sexually transmitted infection (STI) syndromes.

While the syndromic approach is an important tool in the control of STIs and their sequelae, management by syndrome alone is inadequate because infections with important pathogens such as *Chlamydia trachomatis* and *Neisseria gonorrhoeae* may be present without any symptoms or findings. Although an infection may be suspected because of disease in a partner or the presence of another STI, the infection may be diagnosed only by using a specific laboratory test. Thus, in managing STIs, diagnosis by syndrome and laboratory diagnosis by testing for specific organisms are both important and complementary. Consult the chapters of the *Management and Treatment of Specific Infections* section for details on the diagnosis, treatment and management of specific infections.

Table 1. Syndromic approach to the management of sexually transmitted infections

(Patients may present with more than one STI; this table provides an outline of investigations and relevant chapters where more in-depth information can be found. In many cases, screening for other STIs should be carried out.)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Asymptomatic and at Risk for STIs <i>(see Primary Care and Sexually Transmitted Infections chapter)</i>	None	<i>Neisseria gonorrhoeae</i> <i>Chlamydia trachomatis</i> <i>Treponema pallidum</i>	First-catch urine Urethral swab Cervical swab for: <i>C. trachomatis</i> <i>N. gonorrhoeae</i>		If testing is done by methods other than NAAT and sexual contact occurred < 48 hours prior to testing, tests may be falsely negative
		Herpes simplex virus type 1 or 2 Human papillomavirus HIV	Serology for: Syphilis HIV		Typical window period for syphilis is 6 weeks Typical window period for HIV is 3 months
		Viral hepatitis	Hepatitis A (particularly with oral-anal contact) Hepatitis B (if no history of vaccine) Hepatitis C (particularly in IDU)		If non-immune for hepatitis A and B, consider immunization. For chronic viral hepatitis, consult a colleague experienced in this area
			Pap testing if indicated (as per local or provincial/territorial recommendations)	An abnormal Pap test result (e.g., ASCUS, LSIL) is not diagnostic of HPV	Follow up as per recommendations of province/territory

ASCUS = atypical squamous cells of undetermined significance; IDU = injection drug use; LSIL= low-grade squamous intraepithelial lesion;

STI = sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Urethritis	Urethral discharge Burning on urination Irritation in the distal urethra or meatus Meatal erythema	Possible causes: <i>N. gonorrhoeae</i> <i>C. trachomatis</i> <i>Trichomonas vaginalis</i> Herpes simplex virus <i>Mycoplasma genitalium</i> <i>Ureaplasma urealyticum</i>	Urethral swab for Gram stain and culture for gonorrhea (NAAT may also be used where available) AND First-catch urine for <i>C. trachomatis</i> (NAAT)	Presence of ≥ 5 PMNs per HPF and absence of Gram-negative diplococci (likely Non-Gonococcal Urethritis)	See urethritis treatment flow chart in <i>Urethritis</i> chapter for treatment and management recommendations
				Presence of ≥ 5 PMNs per HPF AND Gram-negative intracellular or extracellular diplococci OR Gram-negative intracellular diplococci alone.	See <i>Gonococcal Infections</i> chapter for treatment recommendations
				Presence of Gram-negative extracellular diplococci alone requires further testing.	See <i>Table 5</i> in <i>Gonococcal Infections</i> chapter
				Where microscopy results are not immediately available	Treat for <i>N. gonorrhoeae</i> and <i>C. trachomatis</i> if partner is infected with gonorrhea or if follow-up is not assured. OR Treat for <i>C. trachomatis</i> and consider treating for <i>N. gonorrhoeae</i> if local prevalence is high or sexual contact occurred in a region with high prevalence. If patient treated for gonorrhea and chlamydia and symptoms persist consider other causes or resistance in the case of gonorrhea (see <i>Gonococcal Infections</i> chapter)

HPF = high-power field; NAAT = nucleic acid amplification test; PMN = polymorphonuclear leukocytes; STI = sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Cervicitis (females)	Mucopurulent cervical discharge Cervical friability Vaginal discharge Strawberry cervix	Possible causes: <i>N. gonorrhoeae</i> <i>C. trachomatis</i> <i>Trichomonas vaginalis</i> HSV	Cervical swab for Gram-stain, <i>N. gonorrhoeae</i> culture and <i>C. trachomatis</i> (NAAT or culture)	On Gram-stain presence of ≥ 20 PMNs per HPF with mucopurulent discharge and/or cervical friability	See <i>Chlamydial Infections</i> chapter for treatment recommendations unless gonorrhea is suspected; then, see <i>Gonococcal Infections</i> chapter. Note: Although not a sensitive test, Gram stain may be helpful in diagnosing mucopurulent cervicitis and gonorrhea in symptomatic females.
			Swab of cervical lesions for HSV		If HSV is suspected or detected see <i>Genital Herpes simplex Virus Infections</i> chapter for treatment recommendations.
			Vaginal swab for wet mount	Trichomonads	See <i>Vaginal Discharge</i> chapter for treatment recommendations
				Where microscopy results are not immediately available	Treat for <i>N. gonorrhoeae</i> and <i>C. trachomatis</i> if partner is infected with gonorrhea or if follow-up is not assured. OR Treat for <i>C. trachomatis</i> and consider treating for <i>N. gonorrhoeae</i> if local prevalence is high or sexual contact occurred in a region with high prevalence.

HPF = high-power field; HSV = herpes simplex virus; IDU = injection drug use; NAAT = nucleic acid amplification test;

PMN = polymorphonuclear leukocytes; STI = sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Genital Ulcer Disease	Ulcers (erosive or pustular) Vesicles Papules Inguinal lymphadenopathy	Most common: Herpes simplex virus 1 or 2 <i>T. pallidum</i> <i>C. trachomatis</i> (LGV serovars L1, L2 or L3) <i>Haemophilus ducreyi</i> <i>Klebsiella granulomatis</i>	Routine: Swab of lesion for culture (herpes)	Herpes Painful lesions Grouped vesicles Erythematous base Fever and malaise	Consider genital herpes and empiric treatment for either primary or suspected recurrent infection (see <i>Genital Herpes Simplex Virus Infections</i> chapter for treatment recommendations)
			Swab of serous fluid from lesion for dark-field microscopy or DFA for syphilis. Check with laboratory re: availability and Serology for syphilis to include both non-treponemal (RPR/VDRL) and treponemal-specific tests (e.g., MHA-TP, FTA-ABS, TP-PA, EIA)	Syphilis Non-painful lesions Indurated with serous exudate Single lesion in over 70% of cases	Consider primary syphilis. Empiric treatment should be considered if follow-up is uncertain
			Non-routine: If indicated through patient history (MSM, travel) swab of lesion for <i>C. trachomatis</i> for culture or NAAT or consider serology for <i>C. trachomatis</i> (not specific to LGV serovars).	If initial <i>C. trachomatis</i> testing is positive, serovar-specific testing is required to confirm a diagnosis of LGV. See <i>Lymphogranuloma Venereum</i> chapter	If LGV is suspected, treat empirically according to the recommendations in <i>Lymphogranuloma Venereum</i> chapter
			Consider testing for chancroid and granuloma inguinale (link to travel); consult laboratory for availability		See <i>Genital Ulcer Disease</i> chapter for treatment recommendations

DFA = direct fluorescent antibody; EIA = enzyme immunoassay; FTA-ABS = fluorescent treponemal antibody absorbed; MHA-TP = microhemagglutination-*Treponema pallidum*; MSM = men who have sex with men; NAAT = nucleic acid amplification test; VDRL= Venereal Disease Research Laboratory; STI = sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Epididymitis	Unilateral testicular pain/swelling May have erythema and edema of the overlying skin With or without urethral discharge Fever	Most common (varies with age): <i>C. trachomatis</i> <i>N. gonorrhoeae</i> Coliforms Pseudomonads	First-catch urine for NAAT (<i>C. trachomatis</i>); may be used for gonorrhoea where available Urethral swab for Gram stain and gonorrhoea culture and	Palpable swelling of the epididymis Gram stain: Presence of ≥ 5 PMNs per HPF and/or Gram-negative intracellular diplococci Gram stain: Absence of PMNs and Gram-negative intracellular diplococci	For empiric treatment recommendations, see <i>Epididymitis</i> chapter See <i>Epididymitis</i> chapter for treatment recommendations for epididymitis likely caused by chlamydial or gonococcal infections See <i>Epididymitis</i> chapter for treatment of organisms other than chlamydia or gonorrhoea
			Midstream urine for culture and sensitivity (enteric organisms, coliforms)		See <i>Epididymitis</i> chapter for treatment of organisms other than chlamydia or gonorrhoea
			Doppler ultrasound if testicular torsion is suspected		If symptoms are of rapid onset, testicular torsion needs to be considered, as this is a surgical emergency

HPF = high-power field; NAAT = nucleic acid amplification test; PMN = polymorphonuclear leukocytes; STI=sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Pelvic Inflammatory Disease	Lower abdominal pain Deep dyspareunia Abnormal bleeding Fever	<i>C. trachomatis</i> <i>N. gonorrhoeae</i> Genital-tract mycoplasmas Other aerobic or anaerobic bacterial species	Cervical swab for Gram stain and gonorrhea culture Cervical swab for <i>C. trachomatis</i> (NAAT or culture) Vaginal swab for culture, Gram stain, PH test, whiff test and wet mount Urine ± serum bHCG to rule out ectopic pregnancy Other serological tests: ESR C-reactive protein	On bimanual exam: Cervical motion tenderness Adenexal tenderness Adenexal masses Other findings: RUQ pain Cervicitis Fever	For empiric treatment recommendations and definitive diagnostic criteria, see <i>Pelvic Inflammatory Disease</i> chapter Ensure treatment is appropriate to results of clinical findings and Gram stain, wet mount, PH test and whiff test, see <i>Pelvic Inflammatory Disease</i> chapter

bHCG=beta human chorionic gonadotropin; NAAT=nucleic acid amplification test; STI=sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Vaginal Discharge and Low Risk for STIs (for risk factors) see <i>Primary Care and Sexually Transmitted Infections</i> chapter)	Vaginal discharge Vaginal odour Vaginal/vulvar pruritus Vaginal/vulvar erythema Dysuria	Most common: Bacterial vaginosis	Vaginal swab for pH test and Gram stain Vaginal swab for wet mount/amine odour	On examination: Watery white/grey copious discharge On microscopy: Predominance of Gram- negative curved bacilli and coccobacilli and presence of clue cells, vaginal pH >4.5, whiff test positive	Treat for bacterial vaginosis. See <i>Vaginal Discharge</i> chapter for recommendations
		Vulvovaginal candidiasis		On examination: Clumpy white, curdy discharge On microscopy: Budding yeast, pseudohyphae and, if able to test, vaginal pH <4.5, whiff test negative	Treat for candidiasis. See <i>Vaginal Discharge</i> chapter for recommendations
		Trichomoniasis		On examination: Frothy white or yellow discharge On microscopy: Motile flagellated protozoa (trichomonads) and, if able to test, vaginal pH >4.5, whiff test negative	Treat for trichomoniasis. See <i>Vaginal Discharge</i> chapter for recommendations. Treat sexual partner(s)
					For low-risk individuals where no testing/ microscopy is available or follow-up is not assured, treat according to clinical picture

STI=sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Vaginal Discharge and High Risk for STIs (for risk factors see <i>Primary Care and Sexually Transmitted Infections</i> chapter)	Vaginal discharge Vaginal odour Vaginal/vulvar pruritus Vaginal/vulvar erythema Dysuria	Most common: Bacterial vaginosis Vulvovaginal candidiasis Trichomoniasis	As above, plus cervical swab for gonorrhoea culture Cervical swab for <i>C. trachomatis</i> (NAAT or culture) For women without a cervix, see <i>Gonococcal Infections</i> and <i>Chlamydial Infections</i> chapters for specimen-collection recommendations	As above	As above For high-risk individuals where no testing/microscopy is available or follow-up is not assured, treat for bacterial vaginosis, Vulvovaginal candidiasis, trichomonas, chlamydia and consider treating for <i>N. gonorrhoeae</i> if local prevalence is high or sexual contact occurred in a region with high prevalence.

STI=sexually transmitted infection

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Intestinal and Enteric Syndromes: Proctitis Proctocolitis Enteritis	Varies according to specific syndrome: Mucopurulent rectal discharge Anorectal pain Constipation Bloody stools Diarrhea Nausea Abdominal pain/cramps Bloating Fever	Varies according to specific syndrome: <i>N. gonorrhoeae</i> <i>C. trachomatis</i> (LGV and non-LGV serovars) <i>T. pallidum</i> Herpes simplex virus <i>Entamoeba histolytica</i> <i>Campylobacter spp.</i> <i>Salmonella spp.</i> <i>Shigella spp.</i> <i>Giardia lamblia</i>	Specimen collection should be adapted to clinical presentation and patient history	On examination: Mucopurulent and/or bloody rectal discharge	Treat for gonorrhea and chlamydia as per the recommendations in the <i>Sexually Transmitted Intestinal and Enteric Infections</i> chapter If LGV is suspected, treat empirically as per the <i>Lymphogranuloma Venereum</i> chapter
			By anoscopic exam routinely obtain: Rectal swab for gonorrhea culture and chlamydia culture or NAAT (NAAT is not approved for rectal specimens at this time)	If the initial test for chlamydia is positive: send for LGV serovar testing; see <i>Lymphogranuloma Venereum</i> chapter	
			If lesions are present: Syphilis serology Swab for herpes culture	On examination: Anal lesion	If syphilis is suspected and follow-up is not assured, treat empirically as per the recommendations in the <i>Syphilis</i> chapter If HSV is suspected, see <i>Genital Herpes Simplex Virus Infections</i> chapter to determine whether treatment is warranted
			Stool for culture and ova and parasites	History and symptoms suggestive of enteric pathogens	See <i>Sexually Transmitted Intestinal and Enteric Infections</i> chapter for treatment recommendations for the possible causative organisms

LGV=lymphogranuloma venereum; NAAT=nucleic acid amplification test; STI=sexually transmitted infection; HSV=herpes simplex virus

Table 1. Syndromic approach to the management of sexually transmitted infections (continued)

Syndrome	Signs and symptoms	Etiology	Specimens and testing	Microscopy results and clinical findings	Next steps/special considerations
Papular Anal/ Genital Lesions	<p>Growths in anal/genital region or on mucous membranes</p> <p>Multiple and or polymorphic</p> <p>Asymmetrical</p> <p>Non-inflammatory</p> <p>May be accompanied by:</p> <p>Pruritus</p> <p>Bleeding/ obstruction, depending on location (i.e., urethra or vagina)</p>	<p>Human papillomavirus</p> <p><i>Molluscum contagiosum</i></p> <p>Skin tags</p> <p>Carcinoma</p> <p>Normal variations</p>	<p>Visual examination and anal and/or vaginal exam as required by history/ findings</p> <p>Pap testing if indicated as per local or provincial/territorial recommendations</p>	<p>Multiple or single cauliflower-like lesions (condyloma accuminata)</p> <p>External lesions</p>	<p>Treat as per the recommendations in the <i>Genital Human Papillomavirus Infections</i> chapter</p>
				<p>Internal lesions (anal/ vaginal or cervical)</p>	<p>Refer to a specialist for consultation and treatment</p>
				<p>Flat asymmetric lesions (condyloma lata)</p>	<p>Sign of secondary syphilis; see <i>Syphilis</i> chapter for treatment recommendations</p>
				<p>Round, flat, umbilicated papule (<i>Molluscum contagiosum</i>)</p>	<p>May heal spontaneously with or without treatment. Can be treated with liquid nitrogen</p>
				<p>Symmetrical papular genital lesions:</p> <p>Pearly penile papules (coronal sulcus)</p> <p>OR</p> <p>Vestibular papillae (micropapillomatis labialis)</p>	<p>Normal findings; no need for treatment</p>
<p>Chronic lesion, ulceration or irregular pigmentation (may be indicative of cancerous lesion)</p>	<p>Refer to a specialist for consultation and treatment</p>				