Sexually Transmitted Infections

Lymphogranuloma Venereum (LGV)

Notification Timeline:

From Lab/Practitioner to Public Health: Within 72 hours.

From Public Health to Saskatchewan Ministry of Health: Within 2 weeks

Public Health Follow-up Timeline: Initiate within 72 hours.

Infectious Agent

Bacterial infection caused by *Chlamydia trachomatis*, serovars L1, L2, L3.

Case Definition (Public Health Agency of Canada, 2010)

Confirmed Case*:*

Presence of *C. trachomatis* serotype L1, L2, L3 confirmed by DNA sequencing or restriction fragment length polymorphism (RFLP).

Probable Case:

Positive result on culture, nucleic acid amplification tests (NAAT) or serologic testing for *C. trachomatis* plus the presence of proctitis OR inguinal or femoral lymphadenopathy OR a sexual partner with LGV.

Identification

Table 1. Manifestations

Primary LGV	▪ incubation period 3-30 days ▪ small (1-6mm) painless papule at site of inoculation that may ulcerate ▪ self limited and may go unnoticed in up to 50% of people
Secondary LGV	▪ begins within 2-6 weeks of primary lesion ▪ often accompanied by significant systemic symptoms such as low-grade fever, chills, malaise, myalgias, arthralgias; occasionally accompanied by arthritis, pneumonitis or hepatitis/perihepatitis; rarely associated with cardiac involvement, aseptic meningitis and ocular inflammatory disease ▪ abscesses and draining sinuses are possible (less than 1/3 of patients) ▪ involves the lymph nodes and/or anus and rectum

Secondary LGV causing lymphadenopathy	▪ inguinal/femoral is the most common form and is characterized by painful inguinal and/or femoral lymphadenopathy (unilateral in 1/2 to 2/3 of cases), referred to as buboes ▪ "groove sign" inguinal nodes above and femoral nodes below the inguinal ligament (once considered pathognomonic for LGV) ▪ other lymphadenopathy may occur depending on site of inoculation (cervical lymphadenopathy following inoculation during oral sex)
Secondary LGV causing anorectal symptoms	▪ characterized by acute hemorrhagic proctitis ▪ symptoms of proctocolitis ▪ bloody, purulent or mucous discharge from the anus, as well as constipation are common
Tertiary LGV (chronic LGV occurring in 10-20% of untreated cases)	▪ more common in females than males ▪ chronic inflammatory lesions lead to scarring: - lymphatic obstruction causing genital elephantiasis - genital and rectal strictures and fistulae ▪ possible extensive destruction of genitalia

Source: Canadian Guidelines on Sexually Transmitted Infections, 2010.

Incubation Period
Variable with a range of 3-30 days for a primary lesion; if a bubo is the first manifestation, 10-30 days to several months.

Reservoir
Humans, often asymptomatic (particularly in females).

Mode of Transmission
Direct contact with open lesions of infected people, usually during sexual intercourse.

Period of Communicability
Variable, from weeks to years during presence of active lesions.

Specimen Collection and Transport

Definitive diagnosis of LGV requires serovar-specific (confirmatory) testing using DNA sequencing or restriction fragment length polymorphism (RFLP). Clinicians will therefore need to request that testing be done for LGV specifically, as most laboratories will not automatically perform serovar typing. Saskatchewan Disease Control Lab (SDCL) will forward specimens on to National Microbiology Laboratory (NML) for typing.

Due to issues of cross-reactivity and difficulty with interpretation of test results, serological testing should not be used for diagnostic purposes in the absence of culture or NAAT.

Samples that can be taken include:

- swab (urethral, rectal or lesion) for culture;*
- urine specimen for NAAT;
- blood serum sent for complement fixation (CF) looking for high titre.

*For information on specimen sources and culture media refer to Attachment - Transport Media for Specific STIs.

Table 2. Specimen Collection

Stage of infection	Sample Type	Tests	Comments
Primary	Swab of Lesion	Culture or NAAT	Because the invasive nature of LGV has not yet manifested in the primary stage of the infection, serology at this stage is unlikely to be helpful.

Stage of infection	Sample Type	Tests	Comments
Secondary and Tertiary	Bubo aspirate	Culture or NAAT	Identification of *C. trachomatis* in bubo fluid is highly suggestive of LGV, even prior to or without identification of LGV serovars.
	Rectal, Vaginal, Oropharyngeal, or Urethral Swab	Culture or NAAT	NAAT is not officially approved in Canada for use with rectal or oropharangel swabs. Repeat testing is advised to confirm a positive test.
	Urine	NAAT	
	Serology	MIF* Test CF* Test for *C. trachomatis*: positive	Because of the invasive nature of LGV, serology titres are in general significantly higher in LGV vs. non-LGV *C. trachomatis* infections. High-titre (titre ≥1:256) serology is suggestive of LGV infection but is not definitive; low-titre (titre ≥1:64) serology does not eliminate possibility of past or current LGV infection.

Source: Canadian Guidelines on Sexually Transmitted Infection, 2010.
*MIF = microimmunofluorescence * CF = complement fixation

Occurrence

In general, an uncommonly reported sexually transmitted infection (STI) in Canada. It is endemic in parts of Africa, Asia, South America and the Caribbean. A relatively rare disease in industrialized countries; until recently, the majority of cases were acquired in endemic areas. There have been recent outbreaks in men who have sex with men (MSM) starting in the Netherlands in 2003, with reports of cases in Belgium, France, Germany, Sweden, the U.K., the U.S., and Canada.

LGV may enhance the transmission and acquisition of HIV, other STIs and bloodborne pathogens.

The national LGV rate is unknown; however, a national enhanced surveillance system was initiated in February 2005 by the Public Health Agency of Canada in partnership with provincial and territorial public health departments.

Methods of Control

Preventive Measures
Refer to Introduction and General Considerations of STI section of manual for information that should be shared for education and high-risk groups/activities that should be considered.

The Hospital Standards Regulations[1] indicates, "…every newborn in a hospital receives preventative treatment for ophthalmia neonatorum with erythromycin ophthalmic prophylaxis or another therapeutic agent considered to be a suitable substitute."

Immunization
Currently no vaccine for *C. trachomatis*.

Control of Client
Refer to Introduction and General Considerations of STI section of manual for Risk Assessment. This should be used for taking client's history.

Additional information should be gathered regarding history of travel both, outside and within Canada. Information that should be shared for education and high risk groups/activities that should be considered.

Treatment/Supportive Therapy
See Attachment - STI Treatment Guidelines for reference, however, the latest version of the Canadian Guidelines on Sexually Transmitted Infections should be referred to for current treatment guidelines.

[1] *The Hospital Standards Regulations*, 21 Sep 2007 SR 86/2007 s12.

Referrals
Consider additional testing for STI pathogens based on the risk assessment found in the Introduction and General Considerations of this section.

Control of Contacts/Contact Investigation
Treatment of partners:

- Sexual partners from the last 60 days prior to symptom onset, or date of diagnosis where asymptomatic, should be contacted, tested and treated empirically (regardless of whether signs/symptoms are present) as follows:
  - azithromycin 1g PO in a single dose;
    OR
  - doxycycline 100 mg PO bid for 7 days.
- Should test results confirm an LGV infection, treat as recommended for cases above.

If there is no partner during this period, the last partner should be tested and treated.

Follow-up
Patients should be followed until chlamydial tests are negative (test of cure) and the patient has clinically recovered. Test of cure should be performed 4 weeks after the completion of effective treatment to avoid false-positive results due to the presence of non-viable organisms (especially if using NAAT).

Serology should not be used to monitor treatment response, as the duration of antibody response has not been defined.

- Surgery may be required to repair genital/rectal damage of tertiary LGV.

References

Heymann, D. L. (Ed.). (2008). *Control of communicable diseases manual* (19th ed.). Washington, DC: American Public Health Association.

Public Health Agency of Canada. (2010). *Canadian guidelines on sexually transmitted infections*. Ottawa, ON: Her Majesty the Queen in Right of Canada. Retrieved July, 2010 from http://origin.phac-aspc.gc.ca/std-mts/sti-its/.