BC Centre for Disease Control
An agency of the Provincial Health Services Authority

Lymphogranuloma venereum in British Columbia

2004 to 2011

Monika Lindegger, MSc
Travis Salway Hottes, MSc
Mark Gilbert, MD
Richard Lester, MD
Miguel Imperial, MD
Linda Hoang, MD

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Background

Lymphogranuloma venereum (LGV) is a sexually transmitted infection (STI) caused by *C. trachomatis* serotypes L1, L2, and L3. The clinical presentation of LGV includes genital papules, ulcers, lymphadenopathy, or hemorrhagic proctitis. Untreated LGV infection may lead to serious sequelae such as lymphatic obstruction and anogenital ulcerations. The recommended treatment for cases is antibiotics (doxycycline 100mg PO for 3 weeks as opposed to 1 week for non LGV Chlamydia[1]) and a follow up test of cure at 3 to 4 weeks after completion of treatment is recommended. Sexual partners from the past 60 days are to be tested and treated empirically with one week of antibiotics (doxycycline). LGV may be easily misdiagnosed as other sexually transmitted infections or gastrointestinal disease.

LGV emerged in Canada in 2003[2, 3] concurrent to a rise in cases among gay, bisexual, and other men who have sex with men (MSM) communities in Europe and the US.[4, 5] In 2005 the Public Health Agency of Canada (PHAC), in conjunction with several provinces interested in participating in a nationwide LGV surveillance system (BC, Ontario and Quebec) developed a surveillance protocol including an enhanced surveillance form.[6]

The first case of LGV in BC was identified in 2004. Surveillance for LGV is based on passive reporting by physicians and laboratories to the BC Centre for Disease Control (BCCDC) and submission of an enhanced surveillance form. While Chlamydia testing is performed in many laboratories in BC including the Provincial Public Health Microbiology and Reference Laboratory (PPHMRL), no laboratory in BC performs LGV testing; specimens are therefore forwarded for serotyping to the National Microbiology Laboratory (NML) in Winnipeg.

In response to two fulminant cases of LGV in 2010, the PPHRML (which conducts < 15% of all Chlamydia tests in BC) began to review all Chlamydia-positive rectal specimens and send for LGV typing any with specimens from persons with clinical presentations compatible with LGV In early 2011, the PPHRML began routinely sending all positive rectal Chlamydia specimens to NML for LGV testing and augmented case-finding by informing provincial medical microbiologists of recent LGV cases and requesting all positive rectal Chlamydia specimens be forwarded to PPHRML. LGV cases continued to increase in BC in 2011, which was not seen in other provinces[7]. However, reports from Europe indicate a recent increase in LGV cases among MSM.[8-10]

Objective

A review of LGV cases was undertaken in order to better describe the epidemiology of LGV in BC and to investigate the increased number of cases seen in 2011.

Methods

Case definitions: Confirmed cases: DNA sequencing OR Restriction Fragment Length Polymorphism (RFLP) for the presence of C. *trachomatis* serovars L1, L2, or L3. Probable

cases: a positive C. *trachomatis* culture, Nucleic Acid Amplification Test (NAAT) or serology[1] (MIF > 1:256, CF > 1:64) plus proctitis or inguinal/femoral lymphadenopathy or having a sexual partner with LGV.

Case finding and data collection: LGV cases from BC were identified between 2004 and 2011. To increase yield, cases were identified from three data sources: provincial and federal STI surveillance databases, and in PPHMRL laboratory data. A review of clinical records and enhanced surveillance forms was done to elicit demographic, clinical and risk factor information in addition to epidemiological or social links between cases. The provincial STI surveillance data was used to describe trends in rectal Chlamydia infection during this same time period.

Analysis: Data were analyzed descriptively using Excel.

Findings

Between November 2004 and December 31st 2011 there were 31 reports of LGV in BC: seven probable and 24 confirmed. 77% (24/31) of the cases were documented as LGV in the provincial STI surveillance database. Of the remaining seven cases, three were identified through PHAC or PPHMRL records and the other four through review of LGV case report forms.

Figure 1 shows the distribution of probable/confirmed cases by specimen collection date. There is a marked absence of reported LGV cases between July 2006 and May 2010, yet the number of positive rectal Chlamydia cases remained steady (or even increased during that time) as shown in Appendix A. With the exception of two cases in 2006 which were serotype L2, the other 23 confirmed cases were all serotype L2b. All 31 cases were men who have sex with men (MSM) and resided on southern Vancouver Island or in the lower BC mainland; the majority were Caucasian and 74% (20/27 with known HIV status) were co-infected with HIV.

Investigation of 2011 cases

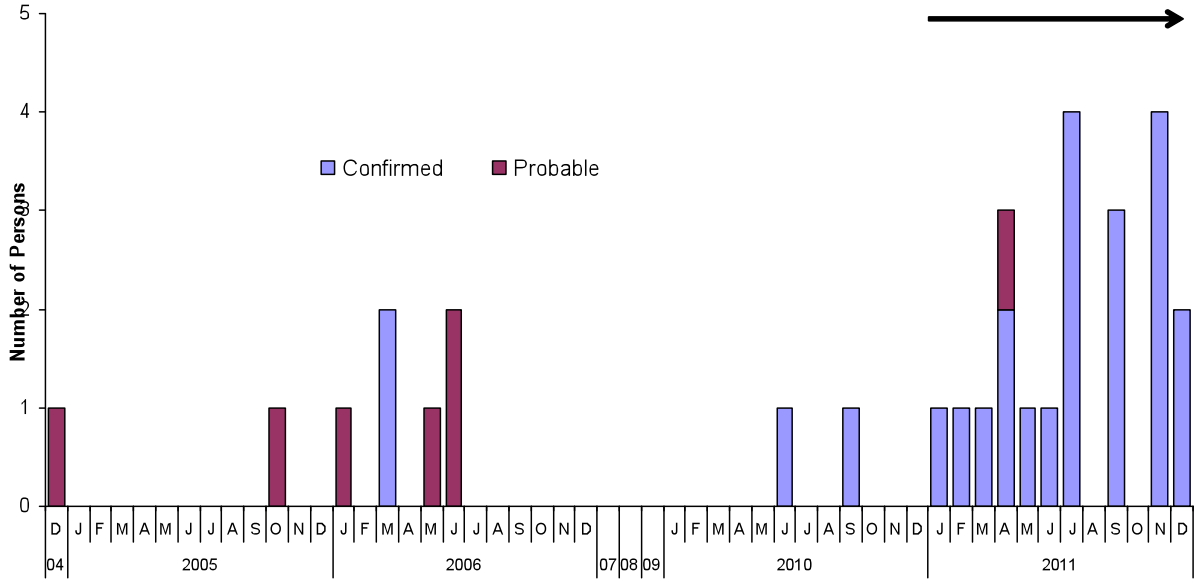
There were 21 cases of LGV in 2011 (68% of all cases in BC since 2004). Demographic profiles are shown in Appendix B and are similar to the profile of all cases (data not shown). All 2011 cases were MSM and the average age was 47 years (range 27-60). 76% of the cases presented with proctitis, and 62% of the cases were known to be HIV positive (four persons were known co-infected with syphilis or hepatitis C; Appendix C).

The number of contacts in the 60 days prior to diagnosis was documented for all cases, with a total of 60 documented contacts (average 2.9 /case, range 1-10). Of the 49 contacts with known disposition, 14 (29%) were notified of their exposure and 35 (71%) were anonymous. Three contacts resided outside of Canada (from one case).

[a] As of 2011, NML is no longer recommending serology for LGV diagnosis due to low specificity.

Identifying information on contacts or venues where contacts were met was documented for 11 (52%) cases, limiting the ability to identify sexual or social connections between cases. Of these cases, two cases were epidemiologically linked, and three cases mentioned a common bathhouse.

Figure 1: LGV cases (probable and confirmed) in BC 2004-Dec 31 2011 by specimen collection date (N=31)[2]



Discussion

There were 31 cases of confirmed or probable LGV in BC between November 2004 and December 31 2011, with the majority of cases (68%) diagnosed in 2011. The lack of reported cases between 2007 and 2009 may reflect under-reporting (or under-diagnosis) of LGV cases, as other provinces in Canada continued to report LGV cases during this period (Stephanie Totten, personal communication) and the number of cases of rectal Chlamydia infections remained constant in BC during that time. While the increase in cases seen in 2011 is likely in part related to the change in laboratory practice, augmented case-finding and routine testing of rectal Chlamydia specimens for LGV starting in that year, all but one of the 2011 cases was symptomatic and so this increase is unlikely attributable to increased screening alone. Furthermore, other countries have recently reported an increase of LGV cases which together indicates that this trend in BC may also be related to increased transmission.[8-10]

[2] Black arrow denotes when a change in lab practice occurred resulting in all positive Chlamydia rectal specimens received at PPHMRL being sent to NML for LGV testing.

In BC, LGV continues to be identified exclusively among MSM, many of who are HIV positive and the chief clinical presentation is proctitis (similar to other jurisdictions).[11] Having HIV may put persons at increased risk for developing invasive LGV disease; however, unique sexual networks among HIV positive persons also likely contributes to these trends. The sending of all Chlamydia positive rectal specimens for LGV testing may have resulted in our preferential finding of rectal (vs. urethral) cases.

It is likely that the data presented here underestimates the frequency of LGV infection in BC, as is common with passive surveillance systems. In addition, clinicians may not recognize nonspecific findings (such as genital lymphadenopathy), or misdiagnose LGV as non-LGV Chlamydia, other STIs, or gastrointestinal disease such as inflammatory bowel disease or malignancies. The frequency and role of asymptomatic carriers in the emergence of LGV in Canada is unknown. While published reports out of the Netherlands found up to 43% of cases were asymptomatic[12], similar studies in Canada and the UK have not found a reservoir of asymptomatic LGV cases.[13, 14]

In addition to appropriate testing and treatment of LGV cases, the control of LGV depends on the appropriate follow-up of contacts. We found that a majority of contacts were anonymous, and of known contacts most were notified by the cases themselves. Furthermore, LGV test results may take up to two weeks to return following a diagnosis of Chlamydia, by which time contacts may have been notified of Chlamydia infection and may not be re-notified for testing for LGV (although treatment for contacts is the same for LGV and non-LGV Chlamydia).

This investigation identified a number of limitations with the current provincial surveillance system for LGV. A few cases were not identified as LGV in provincial surveillance data, which may be due to specimens being sent to NML for testing by other laboratories in BC (e.g., not captured in PPHRML data). Many cases had incomplete or missing data regarding risk factors, venues where met sex partners, or contact identifiers, affecting our ability to establish epidemiologic connections between cases. It is also possible that contacts to LGV cases are treated presumptively without being tested for Chlamydia. This may result in under-representation of probable cases as a positive Chlamydia result is required to meet the definition of a probable case.

Summary and actions taken

In this report we describe an increase in LGV cases in BC in 2011. While the systematic testing of all positive rectal Chlamydia specimens starting in late 2010 likely improved case finding, the increase in cases may also be related to increased transmission as has been reported in Europe. We are not aware of any other jurisdiction in North America which has reported an increase in LGV cases in the past year.

The following actions in response to these findings are being taken in BC:

- Communication about the increase in LGV cases and symptoms of LGV to physicians, with a focus on gastroenterologists, general surgeons, infectious disease physicians,

emergency physicians and general practitioners with a large proportion of MSM clients in their practice.

- Communication with providers working in sexual health services and to community organizations and other providers involved with gay men's health services.
- Exploring the possibility of routine testing of positive rectal Chlamydia specimens for LGV by other laboratories.
- Adopting an enhanced, centralized follow-up model for LGV similar to that in place for syphilis, in order to improve case and contact follow-up, improve quality of surveillance data, and better understand risk factors and epidemiologic connections between cases.
- Revising the probable case definition for LGV to include individuals with clinical signs and symptoms of disease and history of exposure to a known contact of LGV, who have not been tested for Chlamydia.
- Sharing findings with national and international public health colleagues through established communication channels.

Acknowledgements

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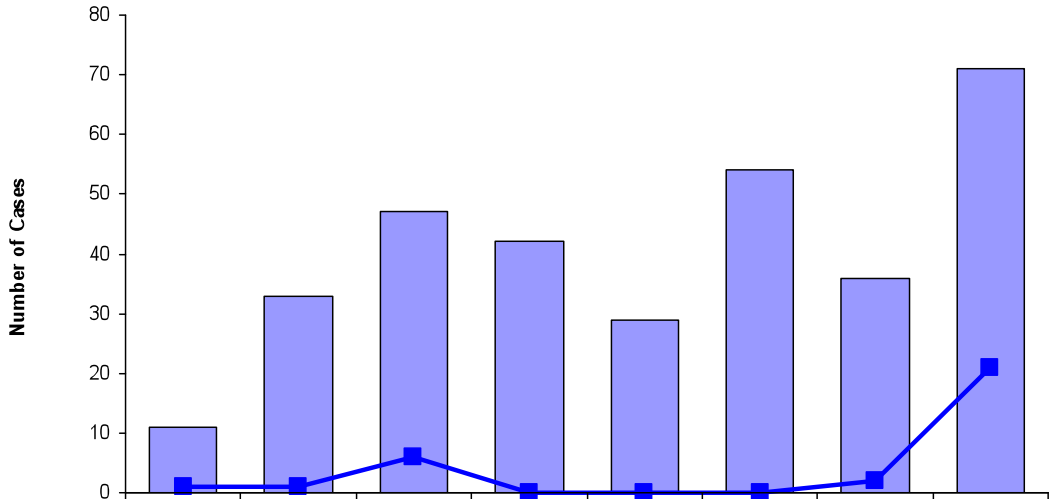
Appendix A: Cases of rectal Chlamydia and LGV in BC, 2004 - 2011



	2004	2005	2006	2007	2008	2009	2010	2011
Rectal Chlamydia	11	33	47	42	29	54	36	71
LGV	1	1	6	0	0	0	2	21

Appendix B: Demographic profiles for LGV cases diagnosed in 2011

Demographics		N=21	
		#	%
Gender	Male	21	100%
	Female	0	0%
	Unknown	0	0%
Age	Range	27 - 60	
	Average	47	
Residence	VCH	18	86%
	VIHA	2	10%
	FHA	1	5%
Ethnicity	Caucasian	14	67%
	Asian	2	10%
	Aboriginal	2	10%
	Hispanic	1	5%
	Unknown	2	10%
Sexual Orientation	MSM*	21	100%

*Self-reporting as MSM, gay or homosexual

Appendix C: Clinical information for LGV cases diagnosed in 2011

2011 Confirmed and Probable LGV N=21		Yes	No	Unknown Missing
Signs and Symptoms	Proctitis*	16 (76%)	2 (10%)	3 (14%)
	Inguinal Lymphadenopathy	2 (10%)	9 (43%)	10 (48%)
	Anogenital rectal mass, lesion, papule	3 (14%)	7 (33%)	11 (52%)
	Bloody stool	1 (5%)	6 (29%)	14 (67%)
	Malaise	0 (0%)	7 (33%)	14 (67%)
Coinfection	HIV	13 (62%)	6 (29%)	2 (10%)
	Gonorrhoea	5 (24%)	11 (52%)	5 (24%)
	Warts/HPV	3 (14%)	3(14%)	15 (71%)
	Syphilis	2 (10%)	11 (52%)	8 (38%)
	Hepatitis C	2 (10%)	9 (43%)	10 (48%)
	Non LGV Chlamydia	1 (5%)	14 (67%)	6 (29%)
	Genital Herpes	0 (0%)	8 (38%)	13 (62%)

*Proctitis: cases with a clinical diagnosis in addition to all cases with one or more of the following rectal symptoms: bloody discharge, pain/swelling, mucus/discharge, frequent BM or persistent diarrhea, or burning/itchiness