

# **LYMPHOGRANULOMA VENEREUM**

See also Chlamydia Trachomatis

## **Background**

### 1. Definition

- Sexually transmitted disease<sup>1</sup>
- Caused by L1, L2, and L3 serovars of Chlamydia trachomatis
- Characterized by a transient genital ulcer and inguinal adenopathy
- Also referred to as
  - Climatic bubo
  - Lymphogranuloma inguinale
  - Durand-Nicholas-Favre disease

### 2. General information

- Has 3 stages of infection similar to syphilis
- Usually clinic diagnosis in context of epidemiologic information and C trachomatis testing if available

## **Pathophysiology**

### 1. Pathology

- Invasion of lymphatic tissue by Chlamydia<sup>1</sup>
- Leads to lymphoproliferative reaction
- Usually direct extension from primary site to lymph nodes
- Organism multiplies within macrophages in lymph nodes
- Necrosis occurs within the nodes with abscess formation
- May lead to multiple sinus tracts and scarring
- Three stages of infection
  - Primary infection
    - 3-12 day incubation period
    - Characterized by a small genital ulcer or mucosal inflammatory reaction
    - Self-limited
  - Secondary infection
    - 2 to 6 weeks later
    - Direct extension to regional lymph nodes
    - Can cause an inguinal syndrome in men w/inflammation of deep and superficial inguinal nodes (“groove sign”)
    - Proctitis may occur after receptive anal intercourse
    - Constitutional signs may be present
  - Tertiary infection (rare)
    - Fibrosis and strictures in the anogenital tract

### 2. Incidence, prevalence

- Endemic regions<sup>2</sup>
  - East and West Africa
  - India
  - Parts of SE Asia
  - The Caribbean
  - 2-10 % of genital ulcer disease in India and Africa
- Rarely found in developed countries
- However, since 2003 outbreaks in Europe and USA<sup>3</sup>

- Mainly among MSM
  - Especially those infected w/HIV
3. Risk factors
- Acute infection reported 5 x more often in men than women
  - Late complications more common in persons who have receptive anal intercourse
  - Peak age range 15-40 yo.
  - Unprotected sex
  - Sex in endemic countries
  - Multiple sexual partners
4. Morbidity/ mortality
- Complete cure w/early recognition and treatment
  - Rarely systemic spread w/arthritis, pneumonitis, hepatitis or perihepatitis
  - Third stage of disease can lead to permanent sequelae
    - Genital deformity (esthiomene)
    - Lymphatic obstruction with genital elephantiasis
    - Rectal strictures and fistulas
    - Death (rare) may be caused by complete bowel obstruction and perforation

## **Diagnostics**

### 1. History

- Symptoms
  - Onset
  - Location
  - Duration
  - Severity
  - Ask specifically about
    - Genital or rectal ulcerations
    - Lymph node swelling
    - Symptoms of acute proctitis<sup>4</sup>
  - Low-grade fever, chills
  - Myalgias
  - Abdominal pain
  - Rectal pain or bleeding, tenesmus
- Sexual history
  - New partners
  - Number of partners
  - Oral, anal or vaginal penetration
  - Condom use
  - Past STD history
  - HIV status

### 2. Physical examination

- Look for signs of various stages<sup>1</sup>
- Primary
  - Small painless papule or herpetiform ulcer at site of inoculation (vagina, penis, rectum or cervix)
- Secondary

- Large tender usually unilateral inguinal/ femoral lymphadenopathy also referred to as buboes
  - **Groove sign:** enlargement of nodes above and below the inguinal ligament in inflammation of deep and superficial inguinal nodes
  - Suppurative or ruptured lymph nodes
  - Bloody, purulent or mucous discharge from the anus (proctitis)
  - Large buboes more frequent in men
  - Women may complain of pelvic pain (inflammation of deep iliac or perirectal nodes)
  - Low-grade fever
  - Tertiary
    - Genital scarring with ischemia and tissue necrosis (esthiomene)
    - Genital elephantiasis
    - Perirectal abscess, fistulas, strictures
    - Hyperplasia of intestinal and perirectal lymphatics (lymphorrhoids)
3. Diagnostic testing<sup>4</sup>
- Primary
    - Swab lesion using a Nucleic Acid Amplification Test kit for Chlamydia<sup>4</sup>
    - Culture can be done but low yield
    - Serology not useful at this stage
  - Secondary
    - Aspirate buboes for culture or Nucleic Acid Amplification testing
    - Can do rectal, vaginal or urethral swabs for Nucleic Acid Amplification testing \*
    - Urine testing with Nucleic Acid Amplification Test
    - Nucleic Acid Amplification testing
      - Includes PCR, LCR, TMA, and SDA tests
      - Does not differentiate between LGV and non-LGV serovars of Chlamydia
      - Further identification of a positive test can be confirmed via the CDC <http://www.cdc.gov/std/lgv/LGVflowchart5-22-2006.pdf>
    - Serology useful if direct detection unsuccessful, but not well standardized<sup>4</sup> (SOR:C)<sup>5</sup>
      - Complement fixation (CF) for chlamydia
        - Titer > 1:64
      - Microimmunofluorescence (MIF) test (more specific)
        - Titer > 1: 256
        - Low titer cannot exclude LGV, high titer in absence of symptoms cannot confirm LGV

\* Nucleic Acid Amplification testing can only be done rectally and orally if approved by lab being used. Check with lab before sending.

## Differential Diagnosis

### 1. Key DDx<sup>1</sup>

- Genital Herpes
- Syphilis
- Chancroid

- Granuloma Inguinale (Donovanosis)
  - Cat Scratch Disease
  - Crohn's Disease
2. Extensive DDX
- Visible strictures from carcinomas
  - Tuberculosis
  - Infectious Mononucleosis
  - Tularemia
  - Brucellosis
  - Bubonic plague
  - Lymphoma

### Therapeutics

1. Acute treatment<sup>6</sup>
- First line: doxycycline 100 mg PO twice a day x 21 days (SOR:B)<sup>5</sup>
  - Alternative: erythromycin base 500 mg PO four times a day x 21 days (SOR:B)<sup>5</sup>
  - Possible: azithromycin 1 g PO once weekly for three weeks (SOR:C)<sup>6,7</sup>
2. Further management
- Pain relief for active bowel inflammation or for painful buboes
  - Consider aspiration of buboes to avoid rupture and tract formation
  - Incision and drainage
    - Recommended by some
    - Others feel it delays healing
  - Notify and test all sexual contacts within last 2 months
  - Consider other STD screenings, esp. for syphilis and HIV
3. Long-Term Care
- Sexual risk reduction behavior education (SOR:B)<sup>8</sup>
  - If sequelae present, tailor to those complications

### Follow-Up

1. Weekly for 4 weeks or until resolved (Test of cure necessary)
2. Advise sexual abstinence until treatment completed and clinical manifestations resolved
3. Report to local health department
4. Specialty consultation for sequelae

### Prognosis

1. Complete cure if treated in primary or early secondary stage
2. Permanent genital tract changes if not treated before scarring occurs

### Prevention

1. Reduction of risky sexual behavior (SOR:B)<sup>8</sup>
2. Prompt identification and treatment of sexual contacts
3. Condoms probably confer some risk reduction (SOR:C)<sup>1</sup>

<http://www.cdc.gov/std/treatment/2006/genital-ulcers.htm> (link to CDC STD treatment guidelines 2006)

<http://www.cdc.gov/std/lgv/default.htm> (link to CDC LGV project)

## References

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**Author: Grace Alfonsi, MD, University of Colorado FMR Denver**

**Editor: Robert Marshall, MD, MPH, Capt MC USN Puget Sound Family Medicine Residence, Naval Hospital, Bremerton, WA**