

Lymphogranuloma Venereum

Lymphogranuloma venereum (LGV) is a sexually transmitted infection (STI) caused by specific strains of *Chlamydia trachomatis*. Unlike the more common strains responsible for genital chlamydia, LGV is caused by serovars L1, L2, and L3. The infection primarily affects the lymphatic system, causing inflammation and damage to lymphatic tissues. LGV is most prevalent in certain regions, including Central and South America, and disproportionately affects men, particularly those who are HIV-positive and engage in high-risk sexual behaviors. The infection is spread through direct contact with infected skin or mucous membranes during sexual activity.

Pathophysiology

The infection begins with the introduction of *Chlamydia trachomatis* serovars L1, L2, or L3 into the body through mucosal surfaces during sexual contact. After initial infection, the bacteria travel to the lymphatic system, where they cause inflammation and disruption of normal lymphatic drainage. This leads to swelling and damage to the lymph nodes, which can progress if left untreated. LGV typically presents in three distinct stages, each with specific clinical features and complications.

Clinical Presentation

LGV progresses through three stages, with each characterized by different symptoms and timelines:

- **Primary Lesion (Stage 1):** The disease begins with the appearance of a small, painless papule at the site of infection, typically on the penis, cervix, or vaginal wall. This lesion appears 5 to 21 days after exposure and usually heals within a week. However, because it is asymptomatic and often unnoticed, the lesion may go undetected, delaying diagnosis.
- **Inguinal Stage (Stage 2):** Approximately 1 to 6 weeks after the primary lesion heals, patients enter the inguinal stage, characterized by the swelling of one or both inguinal lymph nodes. This stage is often accompanied by systemic symptoms such as fever, muscle aches (myalgia), and joint pain (arthralgia). Lymphadenopathy occurs in 20 to 30 percent of women, making the disease less noticeable in females during this stage. In men, inguinal lymph nodes become tender, fluctuant, and may develop into abscesses, called buboes. A hallmark of this stage is the "groove sign," where both inguinal and femoral lymph nodes become enlarged, leading to a noticeable groove created by the inguinal ligament.
- **Genitoanorectal Syndrome (Stage 3):** This stage often manifests years after the initial infection and is more common in women and men who have sex with men (MSM). As many

women are asymptomatic in the earlier stages, they typically present at this stage with symptoms like proctocolitis—an inflammation of the rectum and colon—resulting in discomfort, bleeding, and sometimes fever. Chronic complications of untreated LGV can include strictures, fistulas, and long-term gastrointestinal symptoms.

Diagnosis

Diagnosis of LGV is challenging due to its nonspecific presentation and the difficulty in culturing *Chlamydia trachomatis* from clinical samples. The preferred diagnostic methods include serologic testing and nucleic acid amplification tests (NAATs), which are capable of detecting the specific serovars responsible for LGV. NAATs are highly sensitive and specific for identifying *Chlamydia trachomatis*, making them the gold standard for diagnosis. Serologic tests can also be helpful, but the diagnosis should be confirmed by a combination of clinical presentation and molecular testing.

Treatment

The treatment of choice for LGV is antibiotic therapy, with doxycycline as the first-line agent. The recommended dosage is 100 mg twice daily for 21 days, which has been shown to be highly effective in treating the infection and preventing complications. For patients who cannot tolerate doxycycline, erythromycin or azithromycin can be used as alternatives, although these may not be as effective in certain cases.

It is crucial to treat sexual partners of the infected individual, especially if the contact occurred within 60 days prior to the onset of the primary symptoms. This approach helps prevent reinfection and further transmission. If there is significant lymphadenopathy with fluctuant buboes, aspiration of the lymph nodes may be necessary to drain the infected material. However, incision and drainage of the lymph nodes should be avoided, as it can lead to further complications and tissue damage.

Prognosis and Prevention

With prompt antibiotic treatment, most patients recover completely without long-term sequelae. However, if left untreated, LGV can lead to chronic complications, such as scarring, strictures, and lymphedema, particularly in the genital and anorectal regions. Prevention of LGV primarily involves safe sexual practices, including the use of condoms and regular screening in high-risk populations, particularly those with multiple sexual partners or those living with HIV.

A vaccine for LGV is not currently available, so prevention depends on public health education, early detection, and appropriate antibiotic treatment.

Conclusion

Lymphogranuloma venereum is a sexually transmitted bacterial infection caused by specific serovars of *Chlamydia trachomatis*. It progresses through three stages: primary lesion, inguinal stage, and genitoanorectal syndrome, with each stage having distinct clinical manifestations. Diagnosis relies on serologic and nucleic acid amplification tests, while treatment primarily consists of doxycycline. Early detection and treatment are critical for preventing complications and transmission. Public health strategies aimed at prevention, screening, and treatment are essential to control the spread of LGV.

References

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