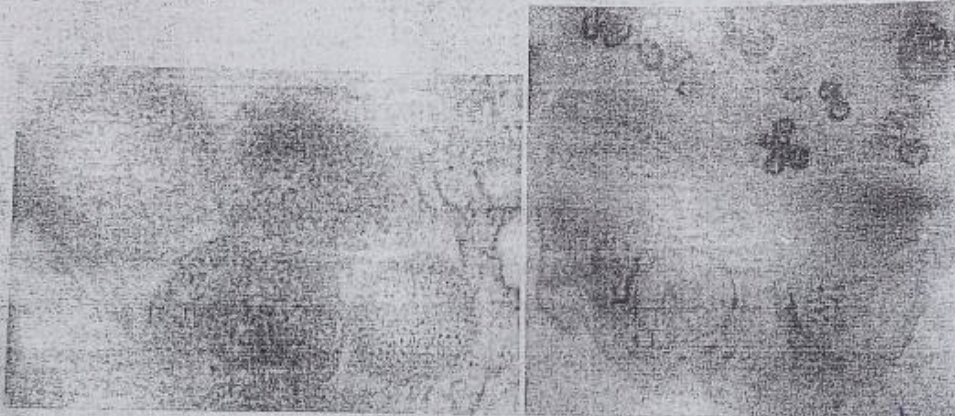


SGD Microbiology

Chlamydia trachomatis Pg# 203

A 17-year-old woman is seen by a physician at an STD clinic due to a vaginal discharge, dysuria and pelvic pain. The patient admits to unprotected sex with a new partner within the last month. The vaginal discharge and a urine specimen were subjected to molecular testing, the results of which were positive. Direct staining of a vaginal epithelial cell smear showed cytoplasmic inclusions similar to those shown (panel B).



Non-monooccal urethritis, cervicitis
Chlamydia Trachomatis

1. What is the most likely etiology and infection?
2. Name the two biovars of this bacterium.
3. Two morphological forms are characteristic of the bacterium shown (panel A). One form is infectious, the other replicative. What are these forms called?
4. What are these bacteria called as and where do they live in humans?
5. Can they be stained by Gram staining?
6. Name the other species of this bacterium and the diseases caused by them.
7. What characteristic virulence trait allows the organism to produce inclusion bodies in the infected cell's cytoplasm?
8. Name some other sexually transmitted diseases.
9. What is the name of the genital tract infection caused by this bacterium?
10. What is the most important tool used for the diagnosis?
11. What are the major target cells of this organism?

KEY:

1. The patient most likely has **non-onococcal urethritis** and **cervicitis** caused by *Chlamydia trachomatis*.
2. **Oculogenital biovar:** causes trachoma, inclusion conjunctivitis, oculo-genital infections & reactive arthritis.
LGV biovar: causes lymphogranuloma venereum, a more invasive genital tract infection associated with lymphoid pathology.
3. The infectious form (smaller form) is called the **elementary body**. The replicative form (larger, less dense form) is called the **reticulate body**.
4. Obligate intracellular bacteria & grow within characteristic cytoplasmic vacuoles.
5. No.
6. Chlamydia trachomatis: Cause STD
Chlamydia pneumoniae: Cause pneumonia
Chlamydia psittica: Cause pneumonia
7. Inhibition of phago-lysosomal fusion allows the bacterium to create an inclusion body in which the reticulate body successfully replicates.
8. Herpes, Gonorrhoea, Syphilis.
9. Genital tract infection with *C trachomatis* serovars L1-L3 may present as **lymphogranuloma venereum**.
10. Growth of the organism in cell cultures with iodine stained inclusions seen in the infected cells.
- 11.

Target cells are non-ciliated columnar epithelial cells found on the mucous membranes of the conjunctiva, urethra, cervix, endometrium, fallopian tubes, rectum, and respiratory tract.

