Chlamydiae

Obligate intracellular bacteria causing Ttrachoma Lymphogranuloma venerum Conjunctivitis Pneumonia **Psittacosis**

Chlamydiae are Bacteria not Viruses

- Once thought of viruses because-
- Obligatelty intracellular
- Cannot grow in artificial media but in cell lines Filterable
- Produce intracytoplasmic inclusions

However confirmed to be bacteria because-Both DNA and RNA Cell wall similar to gram negative bacteria Multiply by binary fission Synthesise own lipids.nucleic acids and proteins Life cycle-

Exists in 2 distinct morphological forms elementary body (EB) and reticulate body(RB)

Tropism for squamous epithelial cells of respiratory tract and macrophages.

Attachment

Intracellular survival

Transform to reticulate bodies

Replication

Transform back to elementary bodies

Inclusion bodies

Release

Persistent infection

Antigenic structure

It possess following antigens

- Genus specific ag-Chlamydeal LPS is genus specific ,used in CFT to dtect genus specific ab
 - and releasing interferons causes scarring and fibrosis
- Species specific-On envelope and divides into species
- Serovar specific ag-MOMP.used in microIF to detect serovar specific antibodies

Chlamydia Trachomatis-Human pathogen causing ocular ,neonatal and urogenital infections

Typing-

Biovars-based on disease produced divided into

2 biovars

a)TRIC

b)LGV biovar

Serotyping-

Based on MOMP 18 serovars identified

- -serovars A,B,Ba and C are associated with ocular disease called trachoma
- -serovars A-D with oculogenital disease
- -Serovars L1-L3 causes sexually transmitted disease lymphogranuloma venerum

C.Trachomatis serovars A,B,Ba and C(trachoma)

- -Transmitted through direct contact with discharges from eyes of infected parents or indirect contact through contaminated clothes or flies
- Acquired by 2-3 yrs of age and common among young children
- Trachoma leading cause of preventable infectious blindness worldwide
- Common in India

- C.Trachomatis serovars D-K
- Causes genital infections
- Nongonococcal urethriris
- Post gonococcal urethritis, Epididimitis, reactive arthritis
- Cervicitis, salpingitis, endometritis
- Ocular infections-opthalmia neonatorum,conjunctivitis
- Pneumoniae in infants

C.Trachomatis serovar L1,L2 L3

Agent of LGV chharacterised by ulcer on penis or vulva painless with elargement of lymphnodes Common in India though declining

- Lab diagnosis
- Specimen collection-As chlamydia are intracellular so sample must contain cells
- Urethral swab, endocervical swab, conjunctival swab, bubo aspirate, urine sample (morning)

Microcsopy-

- Gram staining poorly stained
- Gram staining often reveals sterile pyuria

Presumptive diagnosis based on neutrophil count-

- NGU, PGU, Urethritis-4Neutrophils/OIF
- Cervicitis 20 neutrophils/OIF
- Proctitis 1neutrophil/OIF
- Other stains-castaneda, Machiavello and Gimenez stains helps to detect inclusion bodies

Lugols iodine – Detects inclusion bodies because of presence of glycogen Inclusion bodies are also known by name-Halberstaedter prowazek body in trachoma Miyagawa corpuscle in LGV Direct immunoflourescence test(DIF)-sensitive but less specific because of non specific floursence

Enzyme immunoassay(antigen detection)-Less specific and confirmed by NAAT or DIF

- Easy to perform
- Culture-embryonated eggs, animals and cell lines
- Cell line gold standard in past but less sensitive, time cosuming and labour intensive
- Cell lines commonly used are McCoy, HeLa 229,
- BHK-21 cell line
- Detected by staining for inclusions

NAAT-

Sensitive ,specific,differentiate species and serovars.

Diagnostic assay of choice by CDC PCR LCR

TMA

SDA

Serology(ab detection) CFT **ELISA** MIF-best antibody test available at present **Treatment-For trachoma azithromycin** Doxycycline for genital infections Erythromycin for neonatal infections Prevention-screening for those at risk, barrier methods and treatment of partners