Atypical Bacteria

Intracellular Organisms

R. rickettsia
Endothelial cell Damage
- Rocky mountain spotted fever
- CentiPEDal petechial rash
- Fever, headache, myalgia
- Vasculitis

TX: Doxycycline

Rickettsia DX
- Antibody
- Weil-Felix agglut.

Coxiella
Animal Poop
- Q-fever – no rash, Pneumonia, headache, Fever
- Hepatitis

TX: Acellular vax

Anaplasma
Granulocytes PMNs
- Fever, LAD
- Thrombocytopenia
- Leukocytopenia
- Inclusions in granulocytes

TX: Tetracycline

Ehrlichia
Monocytes Macrophages
- Rash (non petechial)
- Fever, myalgia, headache
- Inclusion bodies in monocytes

TX: Tetracycline

R. prowazekii
Dermacentor Tick
Lice
Endothelial cell Damage
- Epidemic typhus
- CentiFUGal petechial rash (spares hands/feet)
- Myalgia, arthralgia, pneumonia
- Encephalitis
- Local eschar

TX: Doxycycline

Ixodes Tick bite

Spirochetes

Borrelia
Wrights Stain
Giemsa Stain
NE USA
- 1st stage – erythema migrans, fever, headache
- 2nd – Arrhythmia, myocarditis, Bell's palsy
- 3rd – Reactive Arthritis, CNS effects

TX: Doxycycline, ceftriaxone

Treponema
STI
ToRCHES
- 1st stage – Chancre
- 2nd – Rash on hands and feet, condyloma lata, LAD, Hepatitis
- 3rd – Gummas, Tabes dorsalis/Paresis, aortic aneurysm (tree barking), Charcot joints
- Congenital – Saddle nose, Hutchinson teeth, Saber shins, deafness

DX: RPR screen, VDRL, FTA-ABS (specific)
TX: Penicillin, Doxycycline (if allergic)

Leptospira
Zoonotic
Urine → water
- Early – fever, headache conjunctivital suffusion
- Renal failure – azotemia
- Hepatitis – Jaundice

TX: penicillin

Gram Indeterminate

Mycoplasma
No Cell Wall
Eaton agar
PI -pilus
Pts close quarters
- Walking pneumonia
- Atypical pneumonia (#1)
- Hemolytic anemia
- Tracheobronchitis
- Interstitial nephritis
- Steven Johnson's – Rare

DX: IgM cold agglutinins
TX: Macrolides, Tetracycline

Legionella
Silver stain/gram (-)
Agar w/ iron, cysteine
Type IV secretion
Pts who smoke cruise/hotel
- Legionnaire's disease
- Hyponatremia
- Pneumonia (atypical), fever, weakness
- Pulmonary w/ CNS
- Lower right lobe
- Pontiac fever – self limited

DX: rapid urine antigen test
TX: Erythromycin, Fluoroquinolones

Acid Fast
Carbol Fuchsin stain

M. tuberculosis
Obligate aerobe
Mycolic acids
Cord factor - activates macrophages (granuloma)
Sulfatide – prevents fusion of lysosomes
- Primary – middle/lower lobe – calcification – Ghon complex - heal
- Latent – caseating granuloma, cachexia (↑TNF)
- Reactivation– (↓TNF) Cough, night sweats, hemoptysis, CNS – apex of the lung
- Pott's disease – TB of the bone, vertebrae,
- Miliary TB – multiple organ failure

TX: Rifampin, INH, Pyrazinamide, Ethambutol

M. leprae
Armadillos
Thrives in cool Temp.
- Tuberculoid (Th1) – hairless lesions, mild
- Lepromatous (Th2) – Glove and stocking peripheral neuropathy, skin lesions (extensor), facial deformities (lion faces)

TX: Dapsone, rifampin, Clofazimine, thalidomide

Bartonella
Warthin starry Stain
Cat Scratch
Cat Bite
- Granulomas
- Lymphadenopathy – regional nodes
- Bacillary angiomatosis – red vascular lesions (immunocompromised Pts)
- Kaposi sarcoma

TX: Doxycycline, macrolides for Bac. angio.

Chlamydophila
Giemsa
Obligate Intracellular
STI
- Life cycle – 1st –elementary EB (enters), 2nd reticular bodies RB (replicates)
- D-K – Watery discharge, Pelvic inflammatory - infertility disease, Reactive arthritis (Reiter), neonatal conjunctivitis (1-2 weeks)
- A-C –blindness (#1)
- L1-L3 – lymphogranuloma venereum – inguinal bubo – can affect anal region
- C. pneumoniae/psittaci – atypical pneumonia (#2 young adults)

DX: PCR
TX: Macrolides (oral), doxycycline, ceftriaxone (co-infection with N. Gon)

Gardnerella
Clue cells
KOH whiff test
- Bacterial vaginosis – disruption of normal flora
- Increased vaginal pH > 4.5
- White discharge, fishy smell

DX: clue cells, KOH whiff test
TX: Metronidazole, Clindamycin

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