

Spirochetes

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9:36 PM

Treponema pallidum:

- Syphilis
- Gram negative, helical bacteria
- Unculturable in vivo
- Use dark field microscopy; almost invisible under Gram stain, Geimsa stain and Ziehl-Neelsen

Syphilis

- Primary syphilis
 - Appearance of chancre 3-4 weeks after infection
 - Fluid from lesion contains bacteria >> seen under dark-field microscopy
- Secondary syphilis
 - 6 weeks after appearance of chancre
 - Generalized or local rash
 - Mucosal lesions with many treponemes
- Spontaneous remission may occur after first or second phase
- Latent syphilis
 - No symptoms of infection
 - Non-transmittable after four years
 - But congenital infection may occur
- Late syphilis
 - Obliterative endarteritis
 - Can involve skin, mucosae, nervous system, cardiovascular system and tissues

Serology Testing:

- Non-treponemal tests (VDRL, RPR, Wassermann)
 - Non-specific: use cardiolipin as antigen
 - Screening
 - Positive in early stages
- Treponemal tests
 - Specific: use treponemal extracts

- Specimens: use treponemal extracts
- FTA-ABS: Fluorescent Treponemal Antibody Absorption
- MHA-TP: Microhemagglutination of T. pallidum
- Used to confirm positive VDRL

Borrelia burgdorferi

- Lyme disease
- Tick bites
- Affects skin, joints, nervous system and heart
- Common in US, rare in Canada
- Use serology for diagnosis (ELISA)
 - Organism is very difficult to see under microscope
 - Difficult to culture
 - Serology does not give positive result in first 2-4 weeks of infection

Lyme Disease

- Treatment:
 - Doxycycline, amoxicillin, cefuroxime for early disease
 - For neurological and musculoskeletal manifestations, undergo prolonged treatment
- Prevention
 - Avoid ticks and wear protective clothing in wood (long sleeves and pants)
 - Vaccine available: ospA antigen of organism