

protozoans,  
parasites,  
rickettsiae  
spirochaetes

protozoans

- Toxoplasma gondii:
- obligatory intracellular protozoan
  - multiplies in cat's gut and then oocysts are excreted in cat faeces
  - invades new animal hosts (including humans), forming tissue cysts including retinal and brain lesions classically
  - human disease results from ingestion of cat faeces or uncooked meat from infected animals
  - usually asymptomatic or benign disease
  - severe illness in immunosuppressed patients results from primary disease or reactivation with ring-enhancing lesions (eg liver, brain, heart, lungs)
  - congenital syndrome if maternal primary disease
  - treated with pyrimethamine and sulphadiazine

- Entamoeba histolytica:
- faecal oral transmission
  - cause of dysentery, colonic and liver abscesses
  - treated with metronidazole and diloxanide for gastrointestinal cyst destruction

- Trichomonas vaginalis:
- motile flagellate
  - sexual transmission
  - causes vulvovaginitis with a 'fishy' smelling discharge
  - treated with metronidazole

parasites

- Echinococcus granulosus:
- tapeworms - cestodes
  - ingestion of canin parasites from dog faeces, usually in rural areas
  - large complex cysts form in solid organs & anaphylaxis may result if complexes spill
  - treated with surgery and albenadazole
- Strongyloides stercoralis:
- roundworms (nematodes)
  - percutaneous transmission in the tropics and subtropics
  - cause of cutaneous larva migrans and metastatic lesions in immuno suppressed patients especially those on corticosteroid therapy
  - may be complicated by life threatening gram negative septic shock

Rickettsiae

- gram negative obligate intracellular arthropod parasites
- include scrub typhus, endemic typhus and Queensland tick typhus
- human infection results after arthropod bites or inhaled faeces with multiplication in endothelial cells
- causes febrile exanthematous diseases
- treated with doxycycline, ciprofloxacin, clarithromycin and cotrimoxazole

Spirochaetes

- Treponema pallidum:
- causes syphilis
  - primary syphilis: painless chancre
  - secondary syphilis: fever, lymphadenopathy, condyloma lata, 'snail trail' buccal ulcers
  - tertiary syphilis: gummas
  - quaternary syphilis: aortic dilatation, general paresis, tabes dorsalis, Charcot's joints, Argyll Robertson pupils, meningovascular disease
  - may be treated with penicillin or doxycycline (Jarisch-Herxheimer reaction describes the reaction with the first dose from massive endotoxin release)
- Leptospira interrogans:
- causes Leptospirosis
  - acquired from contact with rat urine
  - causes a febrile illness with hepatitis, conjunctivitis, myositis, myocarditis, meningitis, purpura, coagulopathy with bleeding & cutaneous eschars
  - may be treated with penicillin or doxycycline