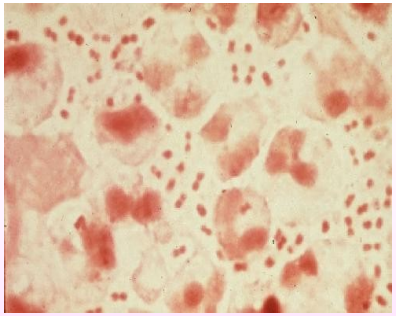
# Other G- bacteria



***Neisseria***

form oxidase and catalase, G- cocci in pairs

***N. gonorrhoeae***

**Microscopy:** G- cocci in pairs and in leukocytes (intracell. parasite)

**Cultivation:** CHA/Thayer-Martin, 48 h, higher tension of $CO_2$

**Biochemistry:** rend only glucosis

**Pathogenicity:** always gonorrhea (uretritis, cervicitis, faryngitis), complication: infertility, peritonitis, new born babies - keratoconjunctivitis. Vector: sexual contact

**Factors of pathogenicity:** IgA protease, fimbrias

**Detection:** microscopy and cultivation on CHA – growth as drop of dew, oxidase +

**Therapy:** penicillin, fluoroquinolons, azithromycin, complications: cefotaxim. New born babies: Septonex drops, prevention safe sex

# *N. meningitidis*

**Microscopy:** G- cocci in pairs

**Cultivation:** CHA, BA s growth factors

**Biochemistry:** rend glucosis and maltosis

**Pathogenicity:** not always the pathogen – sometimes is person only vector, in other cases - faryngitis, sepsis (in young adults) starting as fever with skin spots ends as DIC (first coagulation, later bleeding). Cofactors: immunity, smoking, stress. Transport via droplets!

**Factors of virulence:** IgA protease, systems binding transferin with Fe, capsular antigens (neisserias are divided to serol. groups A, B, C, W135, Y, Z – antigens are used for vaccine preparation), catalase, oxidase etc.

**Diagnostic:** cerebrospinal fluid – rapid diagnostic is needed, agglutination+PCR

Cultivation on BA with vancomycin and colistin, which circle out normal flora, biochemistry

**Therapy and prevention:** vaccination (only against A and C antigen, B antigen is missing!), infusion, plasma, heparin, activators of fibrinolysis, penicillin, ceftriaxon, chloramphenicol

# *Branhamella (Moraxella) catarrhalis !!*

**Microscopy and biochemistry:** G-cocci, oxidase, catalase, hydrolysis of indoxylacetate (INAC)

**Pathogenicity:** bronchitis, conjunctivitis, sinusitis

**Therapy:** ampicillin, cotrimoxazol, macrolides, cefalosporins

**Oral neisseria *(N. subflava, N. sicca* aj*.)***

**Cultivation and biochemistry:** less sensitive than previous neisseria, rend various sugars

**Pathogenicity:** compound of normal flora, in immunocompromised endocarditis

**Diagnostic:** less used, Neisseria test

**Therapy:** PNC

# G- difficult cultivable aerobe rods

| Pathogen | urease | oxidase | Pathogenicity | BA | McConkey | Bordet-Gengou medium |
|---|---|---|---|---|---|---|
| *B. pertussis* | - | + | pertussis (whooping cough) | - | - | 3-5 days, little pearle colonies |
| *B. parapertussis* | + | - | pertussis - mild form | + | +/- | 1-3 days, higher colonies, haemolysis |
| *B. bronchiseptica* | + | + | Disease similar like pertussis | + | + | + |

***Bordetella pertussis, parapertussis, bronchiseptica***

**Pathogenicity:** pertussis: **catarrhal** stadium – cold with fever

1 week later: **paroxysmal stadium –** dyspnoea, cyanotic, crowing child.
Last stadium: **reconvalescence,** also may stay cough

**Factors of pathogenicity:** pertussis toxin, tracheal toxin...

**Diagnostic:** direct-microscopy less used, cultivation on B-G soil eradication of other bacteria due to penicillin, agglutination with spec. antiserum, PCR

Indirect: ELISA, agglutination

**Therapy:** erytromycin

**Prevention:** vaccination with cellular or acellular vaccine (less side effects)

# Intracellular parasites

***Francisella tularensis***

**Cultivation:** difficult, needs cystein/medium with egg yolk (McCoy soil), chicken yolk vac, ČHA

**Pathogenicity+pathogenesis**: various forms:

**Ulceroglandular** - passes through the skin – swelling of lymphatic nodes and local ulcus

**Orofaryngeal/gastrointestinal** – after diggestion of contaminated food – in GIT form bleeding ulcerations, **tyfoid** – gastrointestinal form ending as sepsis

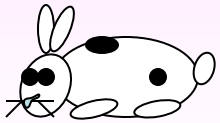
**Oculoglandular** – contaminate hands in contact with conjunctiva – conjunctivitis

**Pulmonary** – inhalation of the dust

**Epidemiology:** contact with infected rodents (hare, tick, rabbits). Autumn - skinning of bucks/foxes after chase

**Diagnosis:** direct - Giemsa stain/immunofluorescence, cultivation on spec. medias with cystein, indirect: ELISA, agglutination

**Therapy:** streptomycin, fluoroquinolons




# *Legionella pneumophila*

**Cultivation:** difficult, BCYE medium (with active carbon), 7 days – grey colonies with fluorescence under the UV light

**Pathogenicity:**

Legionary disease – fever, caugh, headache, chestpain, hard pneumonias

Pontiac fever - 2-5 days lasting light disease with fever and muscle pain

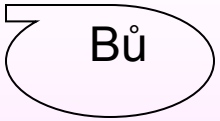
**Epidemiology:** entrance via inhalation – aerosol, also present in water or climatization units (air-condition)

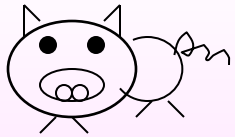
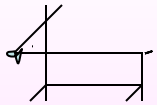
**Detection:** direct – Gramm staining - bad, silver staining, cultivation on BCYE, antigen detection in urine via ELISA method (many serotypes) - specific only for specific serotype

Indirect - indirect immunofluorescence, ELISA

**Therapy:** erytromycin, tetracyclin in hard form, pontiac fever stops without therapy

# *Brucella abortus, suis, melitensis, canis*




**Cultivation:** special media with serum, chicken embryas

**Pathogenicity:** Bang disease (Maltese fever)

enter via skin, various forms: hepatolienal, cardial, orchitis….

**Epidemiology:** contact with animals, inhalation, consummation, prevention: veterinary control

**Detection:** direct – cultivation, indirect - CFT, ELISA, agglutination to proof of incomplete antibodies

**Therapy:** doxycyklin