BRUCELLA

These are obligate
intra-cellular pathogens of animals

The main species of medical importance are

- ***B.abortus*** **- in cattle**
- ***B.melitensis*** **- in goats**
- ***B.suis*** **- in pigs**

The organism can be transmitted to humans in the following ways

- **Drinking of unpasteurized milk or milk products**
- **Through damaged skin or the eyes**
- **Inhalation of aerosols**

Infection with Brucella is called Brucellosis or Undulant Fever

Those working with animals or animal meat are at risk

Clinical features associated with Brucellosis include

- **Fever**
- **Back pain, arthritis and arthralgia**
- **splenomegaly**

Laboratory diagnosis

Specimens for brucellosis include

- **Blood for antibody testing**

- **Bone marrow, lymph gland fluid, joint aspirates and blood for culture**

- ***Brucell*a sp. are highly infectious**

- Must be marked as HIGH RISK

Microscopy

Brucella are rarely found in direct smears from uncultured specimens.

- **They are Gram negative, non-motile coco-bacilli**
- **They stain unevenly and show bipolar staining**

Culture

- ***Brucella*** **species are often difficult to isolate**
- **They need CO_2 enriched atmosphere to grow.**
- **All blood cultures therefore require CO_2 during incubation.**

- **Blood culture should be kept for 4-6 weeks before reporting as “ No organisms ”**

- **For subculturing, biphasic medium is used**

- **Castaneda bottles consisting of an agar slope and a broth**

Serology

Techniques that can be used to test serum for *Brucella* antibodies include

- **Rapid slide agglutination test**
- **Tube agglutination titration test**

Treatment

- Doxicycline alone or in combination with streptomycin of refampin

Prevention

- Vaccination of animals
- Pasteurization of milk

Pasteurella multocida

- **Is primarily a animal pathogen**

- **Occasionally humans become infected by being bitten or scratched by an infected animal such as a cat, dog or rat.**

P.Multicida can cause

- **Respiratory infections**
- **Abscesses**
- **Ulcers**
- **Meningitis**
- **Osteomyelitis**

- **P.multocida is small , Gram negative, coco-bacilli**
- **Non-motile**
- **Most strains show bipolar staining with Giemsa**

Laboratory diagnosis

Specimens include

- **Pus**
- **Secretions**
- **CSF if indicated**

Culture

- **Grows well on Blood agar at 37^{o} C**
- **Does not grow on MacConkey agar or other selective media**

- ***P.multocida*** **is highly sensitive to penicillin**

- **Other antibiotics that show activity against this organism include tetracycline and chloramphenicol**