Lecture topic: HELICOBACTER, CAMPYLOBACTER AND MISCELLANEOUS BACTERIA

SYNOPSIS

HELICOBACTER

- Gram negative rod, curved
- Very Motile corkscrew motion
- Microaerophilic, use amino acids and fatty acids
- rather than carbohydrates to obtain energy
- needs 10% CO2 and 5% O2
- Urease production
- Catalase production
- Oxidase positive
- Growth at 370C, not 250C or 420C
- CULTURE: Skirrow"s medium, chocolate agar (mocroaerophilic)
- Urea breath test positive

CAMPYLOBACTER

- Gram-negative rods with comma, S, or "gull-wing" shapes.
- Motive, with a single polar flagellum
- CULTURE: An atmosphere with reduced O_2 (5% O_2) with added CO_2 (10% CO_2) At 42 ℃ (for selection): Several selective media can be used (eg, Skirrow's medium)

MISCELLANEOUS BACTERIA:

LISTERIA:

- non-sporing, Gram positive bacillus.
- exhibits tumbling motility when grown at 25^{o} C
- Non motile at 37^{o} C.
- It is aerobic or microaerophillic.

- catalase positive
- Ferments glucose, maltose, L-rhamnose and alpha methyl D- mannoside, producing acid without gas.
- Experimental inoculation in rabbits causes marked monocytosis(hence the name monocytogenes).
- Instillation into the eyes of rabbits produces keratoconjunctivitis (Anton test)

CLINICAL FEATURES-

- Meningitis.
- Pneumonia
- Sepsis.

CULTURE-

- Grows on Muller Hinton agar with sheep blood as enrichment.
- Small zone of Hemolysis can be observed around and the underneath of the colony.
- Specimens are enriched if the tissues are kept at 4^0c and plated on the media (**Cold enrichment)**

LEGIONELLA:

- Legionellosis
- 2 distinct patterns of illness
    - Legionnaires disease
    - Pontiac fever
- MORPHOLOGY- Gram negative Coccobacilli.

  Motile – Polar or subpolar flagella.

  better by Silver impregnation, DFA, Immunoelectronmicroscopy

- LAB DIAGNOSIS- SPECIMENS
    - Sputum, bronchial aspirate, pleural fluid, lung biopsy
- Microscopy
    - Fluorescent antibody technique using monoclonal or polyclonal sera

- Culture
  - Identified by colonial morphology .
- Detection of Legionella Antigen
  - ELISA
  - Rapid and specific test
- Detection of Legionella Antibodies
  - Antibodies develop 6-8 days after the onset of clinical illness
  - Detected by indirect fluorescent antibody test with heat or formalin fixed antigens
  - > 256 titre is significant
- PCR

RAT BITE FEVER:

- Caused by Rat bite/Consumption of raw milk or water contaminated by rats
- Relapsing fever,Rash,Arthralgia
- *Streptobacillus moniliformis / Spirillum minus*
- Both are natural parasites of rodents

BACTERIAL VAGINOSIS:

infection of the vagina that happens when there's a change in the normal balance of bacteria there

Grading:

Amsel's criteria, Nugents scoring