SLIDE 7

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P.S: ALL ADDITIONS TO THE SLIDES WERE TAKEN FROM THE BOOK

1-Haemophilus Group

- Gram-negative cocco/large- thin bacilli.. Micro-aerophilic.. Requires growth factors (**V- X-factors**)..Red blood cells, Grow around hemolytic *Staphylococcus*, Rapid autolysis outside body. Hemophilus means it loves the blood so it needs a bloodmedium for growth.
- **Normal Flora**.. Human Upper Respt.Tract. There are Many species Haemophilus a,b,c,.. B is BAD
- opportunistic pathogens and have virulence factors like Endotoxin & Capsule and cause localized-invasive infections.
- **H. influnzae type b**: Most common pathogenic species, capsulated, Causing Localized and Invasive Infection like Sore Throat, Otitis Media, Sinusitis, Conjunctivitis, Brochopneumonia, Septicemia & Meningitis for Children 6 Months-5 Years.
- Treated by Antibiotics : Serious infection: Cefotaxime and Ceftriaxone and for Less serious Amoxicillin and Ampicillin

Lab Diagnosis: Blood, CerebroSpinalFluid & Others Culture.. Chocolate & blood agar included X & V Factors.. Hib-Vaccine for Infants > 2 months old. HIB HIIB HURRAY

- H.Influenza & Pertussis ARE COCCI-BACILLI

- Neisseria IS THE INLY PATHOGENIC GRAM-NEGATIVE COCCI

Haemophilus colonies growth surrounding Stapholococcus colonies

Bordetella pertussis

- Gram-negative coccbacilli.. Aerobic.. Highly in human Communicable agent: Droplets Infection or by close contact.
- Bacteria attach to lower respiratory tract mucosa. Incub. period 7-10 days causes Destruction for tracheal ciliated cells by releasing Pertussis toxin (cytotoxin).
- **Pertussis** start by mild coughing, sneezing then intense cough (Whooping / paroxysmal cough), vomiting and red eyes.
- Infants & Children are more susceptible to infection than adults, high fatal in Adults than in children.
- Antibiotics –erythromycine- are useful in first stage. **Prevention by** DTP vaccine within first 2 -4-6 Months
- **Diagnosis**: Clinical signs and Symptoms.. Less Culture & Lab tests.

Neisseriaceae is composed of 5 genera menhum: Neisseria & Moraxella Groups

- **Neisseria** spp and **Moraxella spp.:** Gram-negative diplococci –each cocci is kidney shaped and both of them stick togather from their concave sides forming a doughnut like, Facultative anaerobes, Oxidase & Catalase+ve, Highly susceptible to Low/High Tempt… Dryness, Rapid Autolysis.
- Lives at Room Tempt.
- Normal Flora Respiratory Tract.. Rare Non-pathogens (N. sicca, N. flava, M. Mucosa).
- Common Pathogens are : ***N. gonorrhea and N. meningitidites.***

1. **N.gonorrhea:**virulence factors:

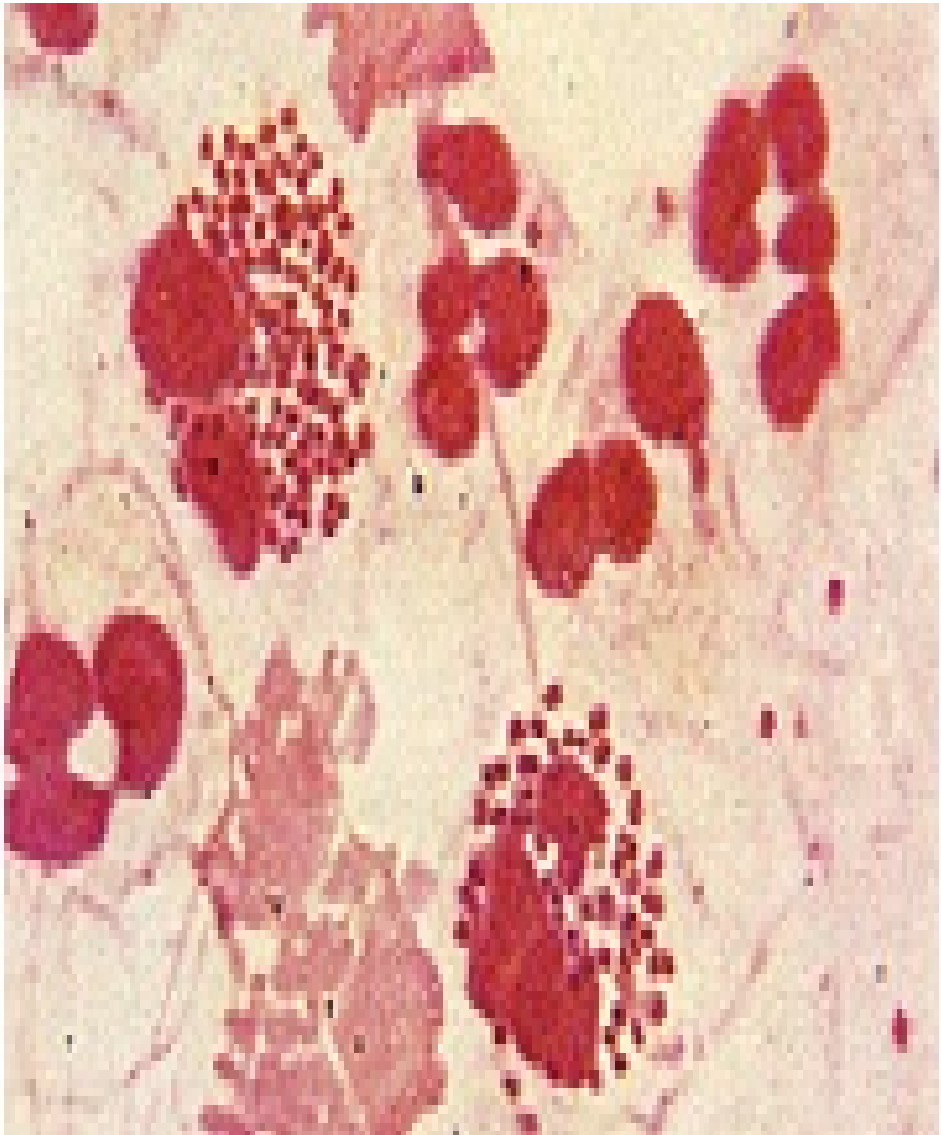
Pili helps in adhering to epithelium and protects it from antibodies and phagocytosis, IgA-Protease, LPS.

Colonization in Mucosa of UGT.. Invasion after destruction the epithelium and causing Inflammation in Genitourinary Tract, Rectum, Throat.

It's a Sexually Transmitted Disease:can be Acute/Subacute/Asymptomatic Infections..

Symptoms :Uretral/Vaginal Discharge, Urethritis, Cervicitis, Salpengitis.. Common Reinfection..

Neisseria Gramstain-Intracellular Presence in Urethral Discharge



- **Lab diagnosis**: Direct Gram-stain, Intracellular G-ve diplococci in WBCs (pus cells), Rapid Culture in Blood/chocolate Agar.
- Treated by Antibiotics, No Vaccine.

2- N. meningitidites: Virulence factors are:

1. Capsular Polysaccharides, has many Serotypes A,B,C,..
2. LPS .. Endotoxin that cause vessels destruction >hemorrhage>> sepsis
3. IgA-Protease.. Cleaves IgA in half.

- Invasive and causes Exogenous Infection in Respt.Tract, Sore Throat, Septicemia, Meningitis.
- Acute disease with high Mortality without treatment.
- Children (6-Months-5 years) more susceptible than adults. Epidemic outbreaks.
- Protective Vaccine is available.

3- M. catarrhalis: it's from other genera in neisseriaceae which is Moraxella

Part of normal Respiratory tract.. Opportunistic pathogen.

causes Pneumonia and Rarely Septicemia. In Compromised Lung/heavy smokers, like COPD and Emphysema. And also it's one of the causes for otitis media

Lab Diagnosis: Direct-Gram-stain, Culture Blood/ chocolate Agar, Biochemical tests, Antibiotics is used for treatment.