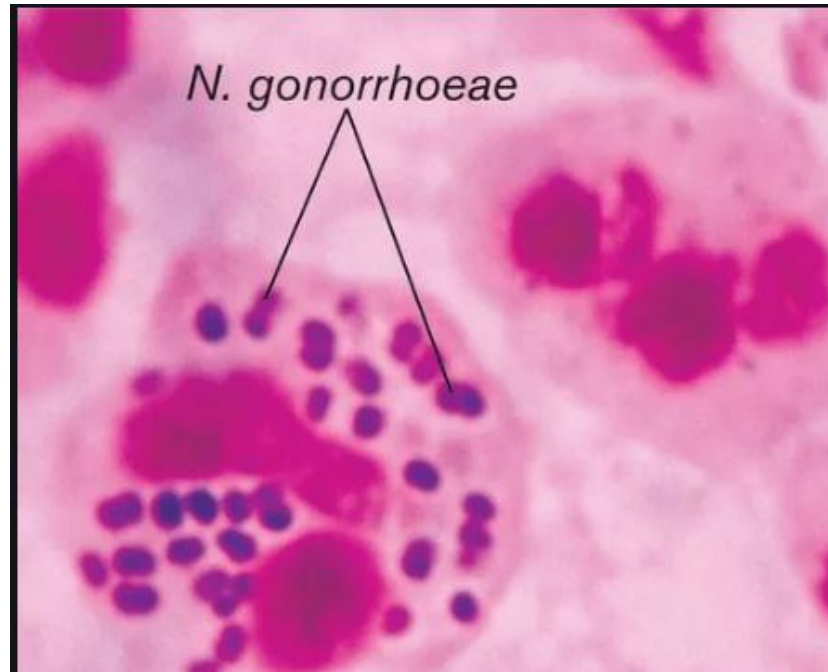


# Gonorrhea



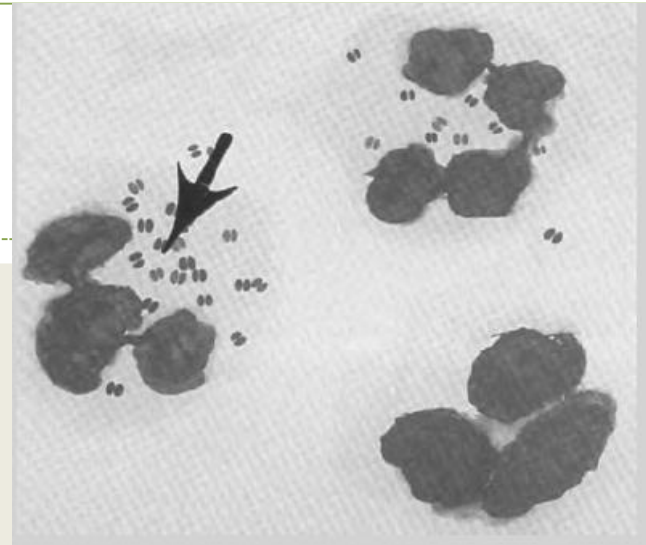
Microbiology III  
Bvoc HCT  
Dr. Angelina Stanley  
9.1.21

# Gonorrhoea



- Gonorrhoea, is a sexually transmitted infection caused by the bacterium *Neisseria gonorrhoeae*.
- Gonorrhoea is one of the oldest known sexually transmitted diseases.
- Increased number of infection due to the emergence of penicillin-resistant strains of *Neisseria gonorrhoeae*.
- Reported cases more in male than female cases.
- Women who contract gonorrhoea frequently do not have the painful symptoms – undetected.
- Gonorrhoea is prevalent throughout the world and occurs most often in large metropolitan areas and in the age group 15 to 24 years old.

# Causative Agent



- Gonorrhea is caused by *Neisseria gonorrhoeae*, commonly called the **gonococcus**.
- The cells are aerobic Gram-negative, nonmotile cocci, occur in pairs, with their adjacent sides flattened like a pair of coffee beans.
- In clinical specimens of gonococci often are observed in microscopy inside **neutrophils** – phagocytosis.
- Gonococci grow best on “**chocolate**” agar,
- It’s a blood-containing medium that has been heated to rupture the red blood cells.
- Cultures are incubated in an air atmosphere enriched with 5 to 10% carbon dioxide.



*Neisseria gonorrhoeae*

# Transmission of Gonorrhoea



- Gonorrhoea is transferred from one person to another during sexual intercourse with infected person.
- It can also be acquired by a newborn infant from an infected mother during passage through the birth canal.
- Results in Gonococcal conjunctivitis

# Pathogenicity of the Gonococcus



- Gonococci initially attach to surface tissue cells of the host by means of **pili** and by a protein called **PH**
- located in the bacterium's outer membrane.
  
- Penetrate to the underlying tissue layers
- multiply and cause tissue damage by means of a potent **endotoxin**.
  
- Not everyone exposed to gonorrhoea contracts gonorrhoea.

# Symptoms of Gonorrhoea



- **In men:**
- Primary site of infection is the urethra
- Severe pain during urination and a yellowish, pus-containing discharge from the urethra.
- Inflammation of the epididymis, prostate gland and urethra
- Sterility may result if the infection extends to the male reproductive system.

# Symptoms of Gonorrhoea



## **In women:**

- the primary site of infection is the cervix.
- Discharge from the vagina
- Pain or burning sensation while urinating
- Sore throat
- Sharp pain in the lower abdomen
- Pelvic inflammation
- Fever

# Symptoms of Gonorrhoea



- **Pelvic inflammatory disease:**
- Inflammation of the tissue surrounding the liver
- A rare complication associated with Fitz-Hugh-Curtis syndrome:
  - septic arthritis in the fingers, wrists, toes, and ankle,
  - septic abortion
- chorioamnionitis during pregnancy
- neonatal or adult blindness from conjunctivitis and infertility



# Symptoms in infants



- Passed on by the mother to the foetus.
- This type of infection results in *gonococcal conjunctivitis*
- Inflammation of the eye and inner surface of the eye lids.
- Leads to corneal damage and blindness if not prevented or promptly treated.
- drops of silver nitrate solution or antibiotics into the eyes of new born infants to prevent infection by gonococci and other pathogens.

# Diagnosis of Gonorrhoea



- Specimen from swabbing the infected site (rectum, throat, cervix)
- Identifying the bacteria in the laboratory:
  - Gram-negative diplococci inside neutrophils when clinical specimens are examined microscopically
  - Cultures grown on chocolate agar medium
- Biochemical tests:
  - positive oxidase test
  - acidic reaction in glucose medium but not in maltose medium
- Identification of the genetic material from the bacteria:
  - DNA probes
  - Polymerase Chain Reaction (PCR)

# Treatments of Gonorrhoea



- Penicillin is usually effective for treatment of gonorrhoea.

Penicillin-resistant gonococci:

- Ceftriaxone one time intramuscularly
- Azithromycin single dose by mouth.
- Spectinomycin,
- Cefotaxime, or other antibiotics are used.

# Treatments of Gonorrhoea



- Treatment should always include medication that will treat chlamydia ex. azithromycin or doxycycline as well as gonorrhoea
- Because gonorrhoea and chlamydia frequently exist together in the same person.
- Work is under way on a vaccine to prevent gonorrhoea.

# Thank you

