



GENITOURINARY SYSTEM

SUBJECT : STI

LEC NO. : Lec 2

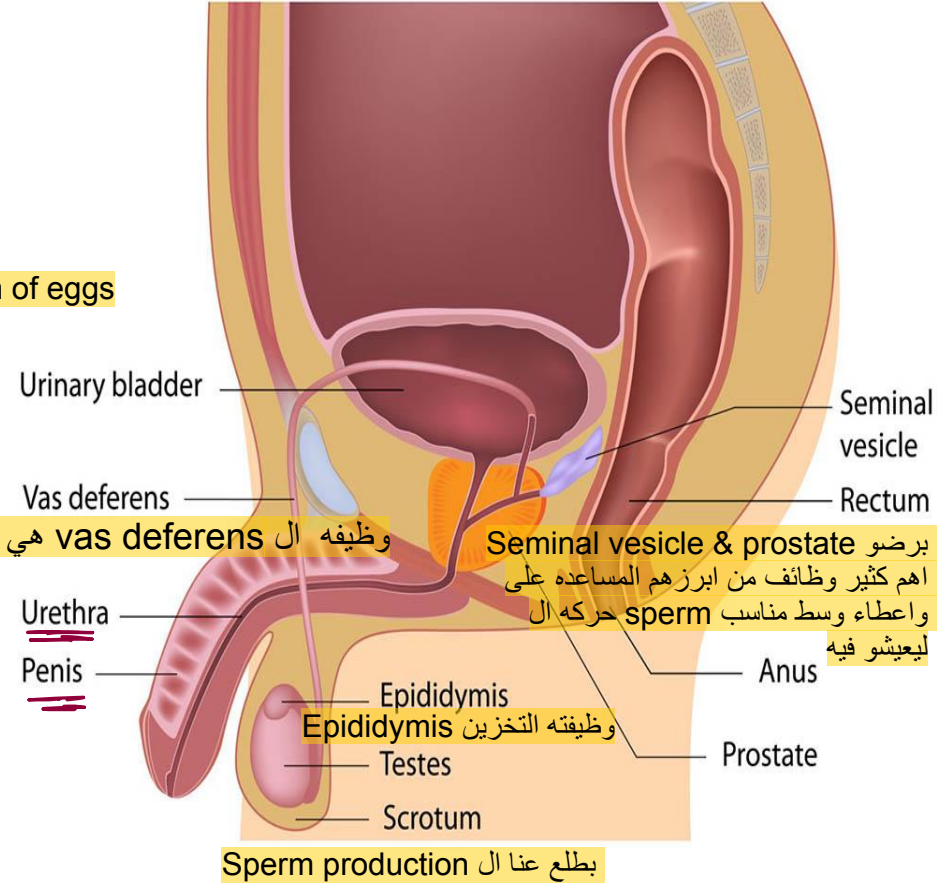
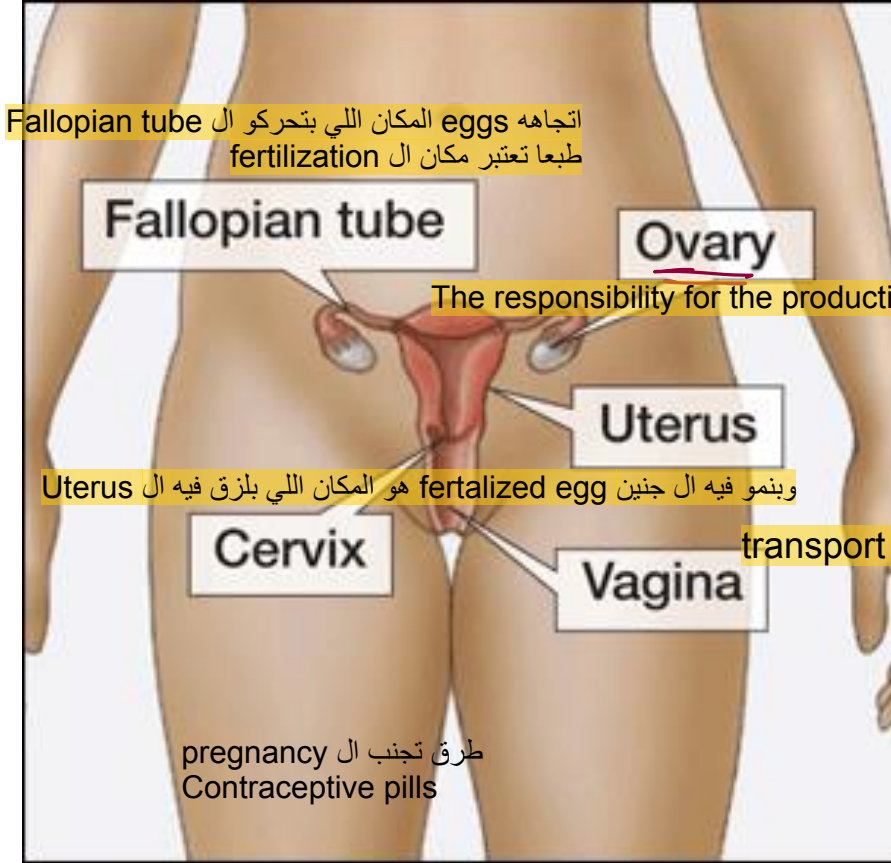
DONE BY : Tariq alsboul

وَقُلْ رَبِّ زِدْنِي عِلْمًا

السلام عليكم كيفكم يا جماعة
بهاي المحاضره ان شاء الله رح نحكي عن STI

STI; sexual transmitted disease

هان رح نحكي شوي عن الاختلافات بين male & female



طبعاً في اشياء ما حكيت عنها بشكل كامل لانه محلها لقدام بال physiology وصراحه ما حسيت انه ما في داعي احكيها
فيكم تسمعو الريكورد للمحاضره اذا حابين الاستزاده (اول عشر دقائق)

- Eight pathogens are linked to the greatest incidence of STIs.

- Of these, 4 are currently curable: هذه ال 4 pathogens الهم علاجات يعني ممكن انه نخلص منهم اذا اخذنا ال treatment الصحيح

- Syphilis, Gonorrhoea, Chlamydia and Trichomoniasis. Bacteria Parasite

في عنا برضو هاي ال pathogens طبعا مع الاسف ما الهم cure يعني بافضل الاحوال بدخلو بحالة latency وكلهم عباره عن viruses

- The other 4 are incurable viral infections:

- Hepatitis B, Herpes simplex virus (HSV), HIV and Human papillomavirus (HPV).

GONORRHEA

Gonorrhoea

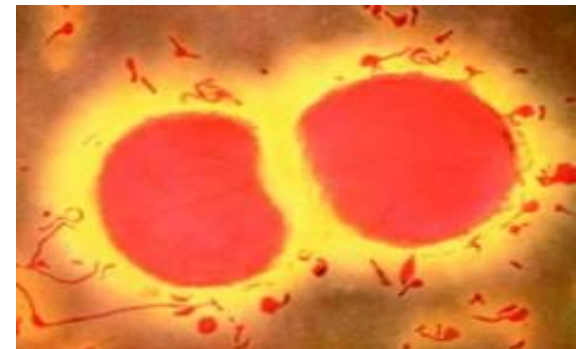
- STI
- *Neisseria gonorrhoeae*.
- * 2nd most common STIs
- * Chlamydia is the most common STIs يكون معهم نفس الاعراض ويتعامل معهم سوا وحتى
 - ▣ Similar risk factors
 - ▣ Multiple sexual partner
 - ▣ Unprotected sex
- Highest rate in Female 15-19 and male 20-24
- 50% of infected women are asymptomatic وهان يكون عنا المشكله لانه بهاي الطريقه ينتقل ال infection لاكثر من حدا من دون ما ينتبهوا لانه ال female يكون عندها asymptomatic وبنفس الوقت اذا كانت حامل رح ينتقل ل جنينها من دون ما تعرف وتسبب اله مرض كمان شوي ح نحكي عنه
- 95% of infected men have symptoms

Properties

- Neisseriae are gram-negative diplococci (Bean or kidney shaped). ¹ ²
- Non motile, non spor forming ³ ⁴
- Incubation period 1-14 days
- Humans are only reservoir, not part of normal flora
- It attaches via pili and penetrates within 1-2 days
- There is a neutrophilic response which creates a purulent discharge

يعني بصيغه اخرى اذا لقيتها ب culture للمريض

Affect mucous membrane ←



- Gonorrhoea is spread through contact with the penis, vagina, mouth, or anus.

هان بحكيك انه فاش داعي انه يكون في عملية ejaculation
عشان تنتقل ال infection لانه باختصار هي رح تنتقل من
تلامس واختلاط ال mucous membrane

Ejaculation is the discharge of semen from the male reproductive tract

- Ejaculation does not have to occur for infection to occur.

- An infected mother may transmit gonorrhoea to her newborn during childbirth, a condition known as

ophthalmia neonatorum

هاي هي الحالة اللي بتصيب الاطفال وبتنتقل فيها ال infection من الام الى الابن من خلال birth canal طبعا بتكون عبارته عن acute conjunctivitis طبعا برضو بصير عنا edema و erythema واذا ما تعالج ممكن تسبب عمى بالطفل

This may cause blindness, joint infection, or a life-threatening blood infection in the baby.



- Gonococci are very sensitive to heating or drying. Cultures must be plated rapidly.
- Causes disease only in humans.
- Killed by drying that's why transmitted sexually.
- Non-sexual transmission is extremely rare

كيف يعني ... يعني انه هاي ال infection ح تنتقل من خلال الادوات



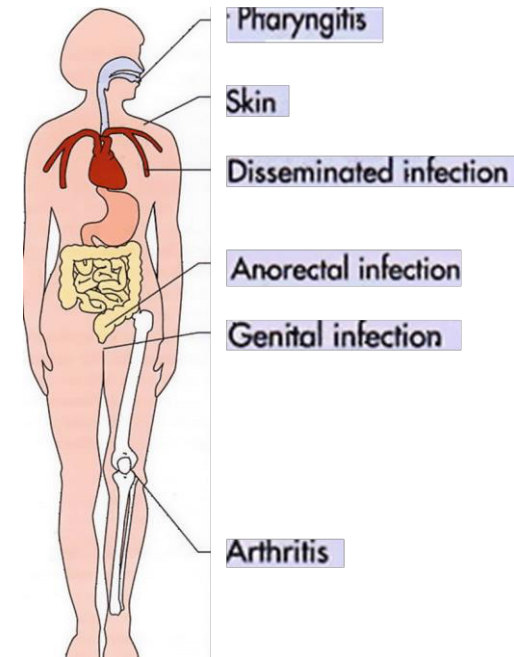
Gonorrhea

- It tends to infect warm, moist areas of the body, including the:
 - Urethra
 - Eyes
 - Throat
 - Vagina
 - Anus
 - Female reproductive tract (the fallopian tubes, cervix, and uterus)

Clinical Findings:

N. gonorrhoea causes following infections.

1. **Genitourinary tract infections.**
2. **Rectal infections.**
3. **Pharyngitis**
4. **Ophthalmia neonatorum**
5. **Disseminated infection** via spread through blood



Genitourinary tract infections :

- Gonorrhoea in men has features of urethritis accompanied by dysuria and a purulent discharge. Epididymitis can occur.
- In women, infection is initially in the endocervix (cervicitis), causing a purulent vaginal discharge and intermenstrual bleeding.



Symptoms in men

- The first noticeable symptom in men is often a burning or painful sensation during urination. Other symptoms may include:
 - Frequency or urgency of urination
 - a pus-like discharge (or drip) from the penis (white, yellow, beige, or greenish)
 - swelling or redness at the opening of the penis
 - swelling or pain in the testicles
- Symptom begins 2-7 day
- Many men experience acute symptoms (95%)



Complications of gonococcal infection in males

Chronic complications:

1. Urethral stricture.
2. Infertility (scarring and block sperm passage).

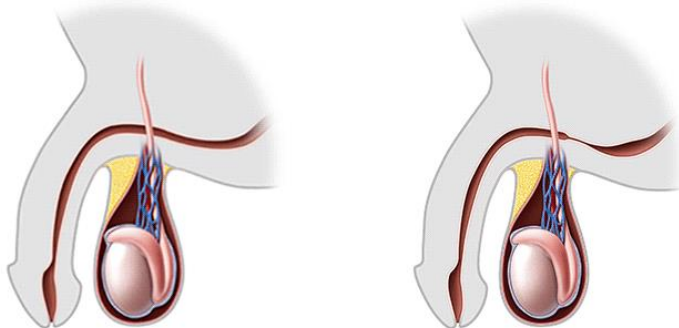
بسبب ال fibrosis اللي رح يصير من خلال chronic inflammation

Acute complications:

1. Ascending infection (prostatitis, cystitis, epididymitis).
2. Infection of adjoining structures (periurethral abscess and infection of median raphe).

Normal Groin

Urethral Stricture



Symptoms in Women

- Discharge from the vagina
- Dysuria, frequency and urgency
- Pain upon engaging in sexual intercourse
- Sharp pain in the lower abdomen
- Symptoms are often mild, 50% have no symptoms
 - Even when symptoms do occur, they are often mistaken for a bladder or vaginal infection
- The most frequent complication is ascending infection to the uterine tubes (**salpingitis**) which can lead to **sterility** or **ectopic pregnancy**

يعني بدي احكيك انه بنسبه كبيره فش اعراض وحتى هاي الاعراض والاشياء اللي بتصير ممكن انه تعتبرها ال female اعراض عاديه وما تميز الموضوع انه في اشئ خطأ

في نفس نظام ال Stictura اللي
يبي في
male



Complications in Women

- **Accessory gland infection**

- **Bartholin's glands** The Bartholin's glands are located on each side of the vaginal opening

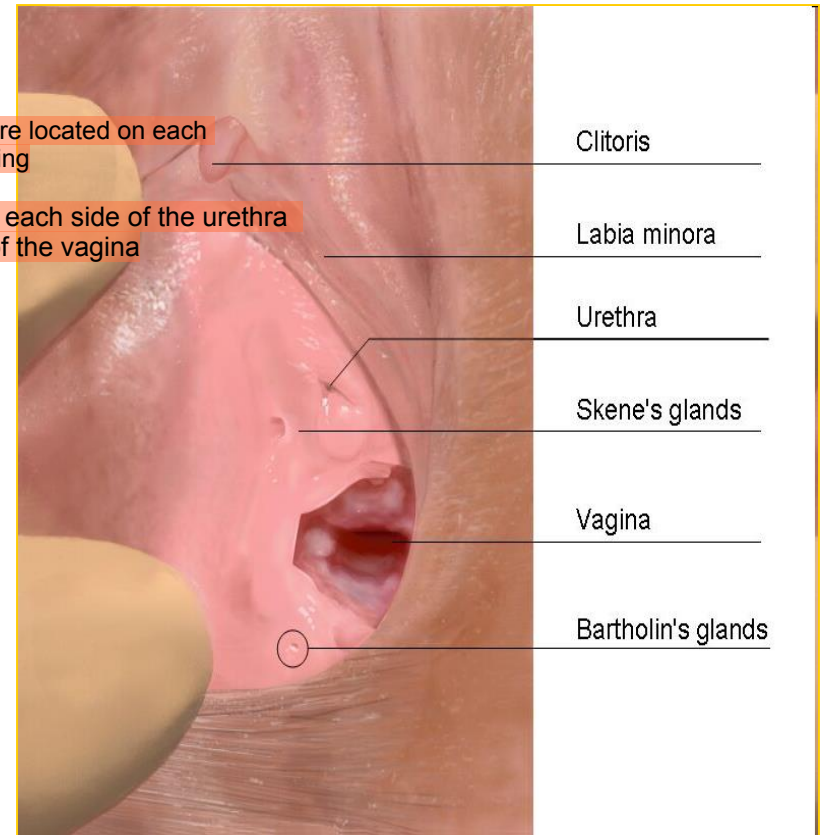
- **Skene's glands** Skene's glands are located on each side of the urethra and it helps in the lubrication of the vagina

- **Pelvic Inflammatory Disease (PID)**

- **Fitz-Hugh-Curtis Syndrome**

- **Perihepatitis**

is a chronic manifestation of pelvic inflammatory disease (PID). It is described as an inflammation of the liver capsule, without the involvement of the liver parenchyma, with adhesion formation accompanied by right upper quadrant



PELVIC INFLAMMATORY DISEASE

- Present in 10%-20% of gonococcal infections in women
- Symptoms range from:
 - Minimal (lower abdominal tenderness) to
 - Severe abdominal pain, fever
 - irregular menstrual bleeding
 - Adenxal tendenrenss
 - Leukocytosis
 - Pelvic peritonitis and abscess
 - Complication:
 - Infertility and ectopic pregnancy

Gonococcal Complications in Pregnancy

هان بحكيك انه في pregnancy في عنا complications ممكن
تصير تاثر ع الحمل نفسه زي الولاده المبكره زي انه ممكن بصير في
عنا نزيف واشياء ثانيه

- Gestational bleeding
- Preterm labor and delivery
- Premature rupture of membranes
- Postpartum endometritis



2. Rectal infections:

- Rectal intercourse or in women with contamination with infected vaginal secretion
- Prevalent in male homosexuals
- Symptoms include:
 - Generally asymptomatic
 - Anal pain and pruritus
 - Tenesmus and constipation
 - Purulent discharge
 - Rectal bleeding

3. Pharyngitis

- Contracted by oral-genital contact.
- The condition may mimic a mild viral or a streptococcal sore throat.
- Typically asymptomatic
- May resolve spontaneously

4.Ophthalmia neonatorum :

- An infection of the conjunctiva acquired by a newborn during passage through the birth canal of an infected mother .
- *If untreated, acute conjunctivitis may lead to blindness.

Gonococcal Ophthalmia Neonatorum



- ¹ Lid edema,
- ² erythema and marked purulent
- ³ discharge
- Preventable with ophthalmic ointment (erythromycin)





6. Disseminated gonococcal infection(DGI):

- **Bacteremia**
- **Fever, polyarthralgia**
- Commonly manifest as arthritis, synovitis, or skin pustules (dermatitis) or **petechial rash**.
- Complication: **endocarditis, meningitis, septic arthritis**.
- Disseminated infection is the most common cause of **septic arthritis in sexually active adults**.

LABORATORY DIAGNOSIS

Specimens collected:

A) In men:

- Urethral exudate
- Urethral scraping(loop r special swab)

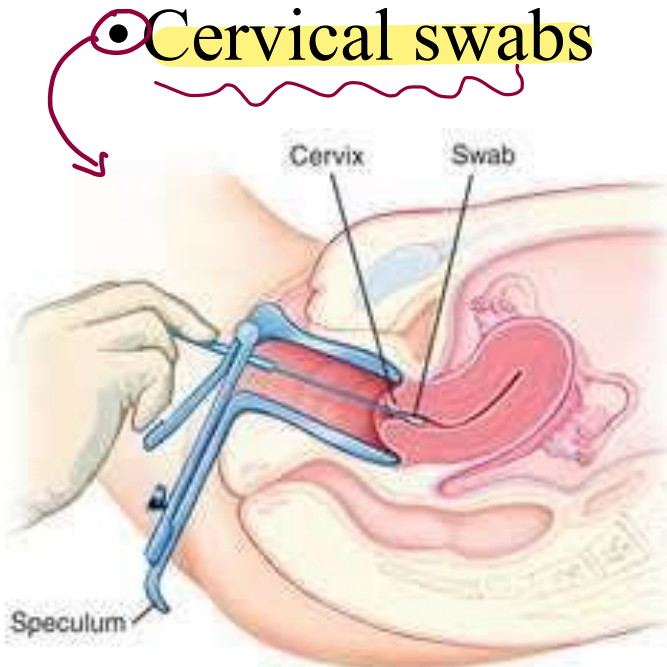
في في ال men عنا 3 طرق عشان نوخذ specimen ونشوف اذا في infection او لا في البدايه اذا في exudate طالع ناخذه مباشره وهاي خاصه بتكون في early morning الطريقه الثانيه انه اذا قتش exudate بدنا نسوي milking لل urethra ونسوي compress على ال penis بالخطوات الموجودين تحت وثالث اشئ ممكن ينعمل هو نسوي scraping ونقشط شوي من الخلايا ونفحصهم

Using your other hand with the swab, roll the swab clockwise just at the tip or outside the opening.



B) In women:

- Cervical swabs



Milking of Urethra



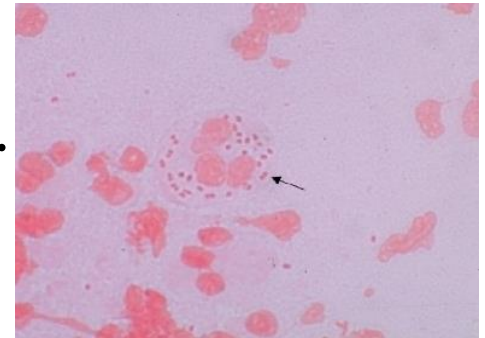
From the base of the penis to the glans

by grasping the penis firmly between the thumb and forefinger

Thumb pressing on the ventral surface and then moving the hand distally, compressing the urethra

Lab diagnosis:

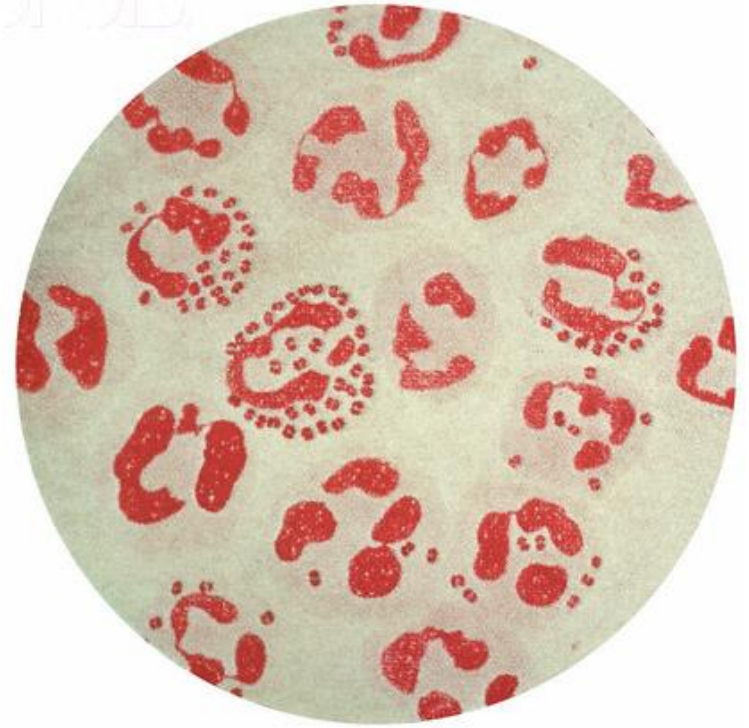
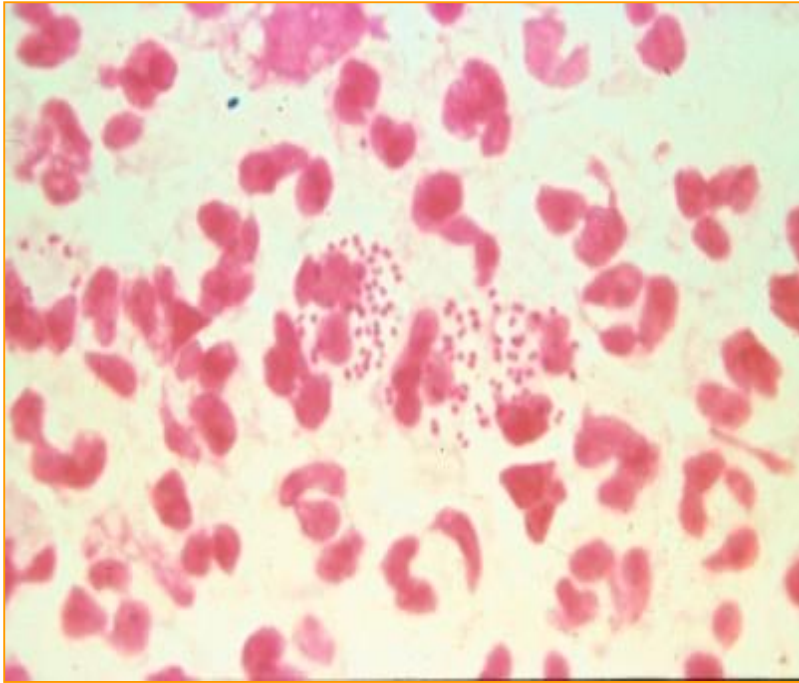
- In the male, the finding of numerous neutrophils containing gram negative diplococci in a smear of urethral exudate provides a diagnosis of gonococcal infection.
- Diagnostic if gram negative diplococci are seen within polymorphonuclear leukocytes (95% sensitivity)
- In the female a positive culture is also needed.



3. Culture:

- *N. gonorrhoeae* grows best under aerobic conditions, and most strains require CO₂ also.

Gonorrhoea: Gram Stain of Urethral Discharge



On Gram stained slides, in gonococcal infection, the following are seen:

Polymorphs.

Gram-negative **kidney-shaped** extracellular and **intracellular diplococci (ICDC).**



Gram stain of urethral discharge showing gram negative, intracellular diplococci.

① ~~~~~ ② ~~~~~

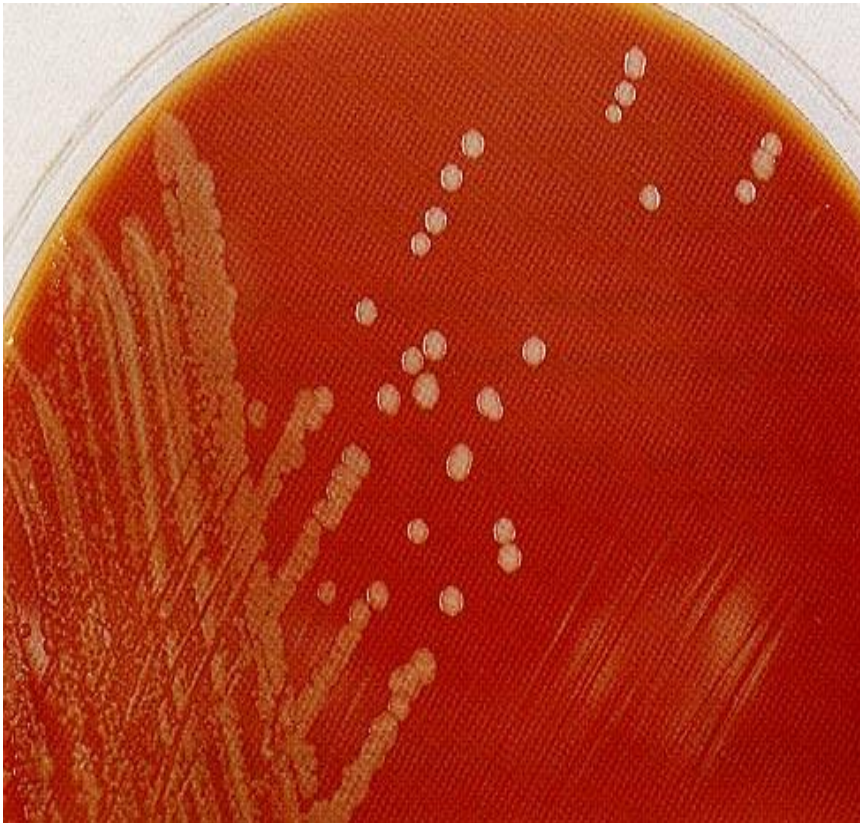
Media used:

- a) Non selective media: Chocolate agar,
Mueller-Hinton agar.

- b) Selective media: Thayer Martin medium (e.g. Martin
Lewis agar) with antibiotics (Vancomycin, Colistin &
Nystatin).

-

Colony morphology: Colonies are small, round, translucent, convex or slightly umbonate with finely granular surface & lobate margins.



Biochemical reactions:

1) Oxidase test: **Positive**

2) Ferments **only glucose**
but not maltose.

عشان نكمل بالفحص بدنا نتذكر انه احنا عنا في نوعين من neisseria
N.meningitidis & N.gonorrhoeae
الفرق بينهم بيين في fermentation للمaltose



DIAGNOSIS

- **DNA probes**
 - High sensitivity and specificity
 - Concurrently test for *N. gonorrhoea* and *C. trachomatis* with a single specimen
 - More widely used than cultures... and cost is similar

TREATMENT

- All recommended therapies are given as a single dose
- Should be given to symptomatic patients at the time of testing

يعني انه اللي عندهم symptoms و clinical presentation
مباشره ببالش فيهم treatment من قبل ما تطلع نتيجته ال culture

Recommended treatment regimens for gonococcal infections: cervicitis, urethritis, proctitis



- **Single dose + chlamydia coverages (Azithromycin or Doxycycline)**
 - Cefixime (suprax) 400mg or ofloxacin 400mg or Cipro 500mg
 - Single large dose IM ceftriaxone 125mg
- Chlamydia coverage: Azithromycin (Zithromax), 1 g PO in a single dose or Doxycycline, 100 mg PO bid x 7 days

Prevention

- The prevention of gonorrhoea involves the use of safety measures and the immediate treatment of symptomatic patients and their contacts.
 - Condom provide high degree of protection
 - Spermicide, vaginal foam: not reliable protection



• وزمليتنا بتول عملتنا سكتشي
للمحاضرة الله يعطيها الف عافية

Neisseria Gonorrhoeae



1. Antigenic variation of pili (evades immune system and has prevented vaccine development)
2. Gram negative diplococci
3. Sexually transmitted infection
4. Dysuria and penile discharge in males
5. Neonatal conjunctivitis
6. Fitz-Hugh-Curtis syndrome
7. Increased risk of ectopic pregnancy
8. Pelvic inflammatory disease
9. Septic arthritis
10. Chlamydial coinfection
11. Treated with ceftriaxone
12. Treated with macrolides (for chlamydial coinfection)

<https://youtube.com/watch?v=qvoXt-iNQzQ&si=AhyhdZAMEe7ghmVt>