

Neisseria gonorrhoeae

gram-negative diplococci (Bean or kidney shaped), Non motile, non spore forming ,Incubation period 1-14 days ,Humans are only reservoir, not part of normal flora ,It attaches via pili and penetrates within 1-2 days, Gonococci are very sensitive to heating or drying ,Cultures must be plated rapidly.

2nd most common STIs (Chlamydial is the most common STIs)

infected women asymptomatic ,infected men symptomatic .(mostly)

There is a neutrophilic response which creates a purulent discharge, spread through contact with the penis, vagina, mouth, or anus, Ejaculation does not have to occur for infection to occur. An infected mother may transmit gonorrhea to her newborn during childbirth, a condition known as ophthalmia neonatorum This may cause blindness, joint infection, or a lifethreatening blood infection in the baby.

Non-sexual transmission is extremely rare

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).

N. gonorrhoea causes following infections. 1. Genitourinary tract infections. 2. Rectal infections. 3. Pharyngitis 4. Ophthalmia neonatorum 5. Disseminated infection via spread through blood.

1.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.

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%)

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

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

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 . The most frequent complication is ascending infection to the uterine tubes (salpingitis) which can [lead to sterility or ectopic pregnancy](#)

Complications in Women : [1.Accessory gland infection \(Bartholin's glands ,Skene's glands\)](#) ,[2.Pelvic Inflammatory Disease \(PID\)](#) [3.Fitz-Hugh-Curtis Syndrome](#) (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

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 :[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, clinical manifestation: Lid edema, erythema and marked purulent 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)
B) In women: Cervical swabs

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. Culture: N. gonorrhoeae grows best under aerobic conditions, and most strains require CO2 also.

On Gram stained slides, in gonococcal infection, the following are seen: Polymorphs. Gram-negative kidney-shaped extracellular and intracellular diplococci (ICDC).

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).

Biochemical reactions: 1) Oxidase test: Positive 2) Ferments only glucose but not maltose.

DIAGNOSIS

DNA probes :High sensitivity and specificity ,Concurrently test for N. gonorrhea 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

Cefixime or ofloxacin or Cipro , Single large dose IM ceftriaxone

Single dose + chlamydia coverages (Azithromycin or Doxycycline)

The prevention of gonorrhea 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.

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