Neisseria gonorrhoeae Disease

Neisseria gonorrhoeae, also called gonococcus, is a gram-negative diplococci that causes the sexually transmitted infection gonorrhea. Symptoms of N. gonorrhoeae differ depending on the specific site of infection. It is also important to note that 10% of infected males and approximately 80% of females with the organism can be asymptomatic. The most common site of infection is the genitals, which can result in a purulent and foul-smelling discharge. Common symptoms include redness, swelling and dysuria. In females, prolonged infection can result in pelvic inflammatory disease when the bacterium travels into the pelvic peritoneum via the cervix, uterus, and fallopian tubes. Complications include infertility due to scarring of the fallopian tubes, and individuals are at an increased risk for ectopic pregnancies. Fitz-Hugh- Curtis syndrome is a rare complication of pelvic inflammatory disease. N. gonorrhoeae can also cause neonatal conjunctivitis and pharyngitis. Disseminated infections can occur resulting in septic arthritis, tenosynovitis, and pustules on the hands and feet. Individuals with a C6-9 complement deficiency are especially vulnerable to disseminated disease.



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Signs & Symptoms

Dysuria
Urine-in-flames
Dysuria specifically refers to painful urination. Infection of the genitals can cause dysuria, along with purulent and foul-smelling discharge.

Pelvic Inflammatory Disease (PID)
Ovaries-and-uterus on Fire
In females, prolonged infection can result in pelvic inflammatory disease when the bacterium travels into the pelvic peritoneum via the cervix, uterus and fallopian tubes. Complications include infertility due to scarring of the fallopian tubes, and individuals are at an increased risk for ectopic pregnancies.

Fitz-Hugh-Curtis Syndrome
Fist Hit Curtain on liver
Fitz-Hugh-Curtis syndrome is a rare complication of pelvic inflammatory disease, and can present as upper right quadrant abdominal pain due to liver capsule inflammation. Characteristically, the inflammation can cause scar tissue on the thin layer of connective tissue that surrounds the liver, causing violin string adhesions from the parietal peritoneum to the liver.

Neonatal Conjunctivitis
Baby Convict-eye-on-fire
N. gonorrhoeae can cause neonatal conjunctivitis when the infant is exposed to the organism in the birth canal. This can lead to corneal scarring and perforation, which can result in blindness. Treatment for neonatal conjunctivitis is erythromycin and silver nitrate eye drop.

Pharyngitis
Pharaoh
Individuals can get gonococcal pharyngitis from oral sex with an infected partner.

Septic Arthritis
Sepsis-snake Around King-Arthur
N. gonorrhoeae can cause gonococcal arthritis, which is the most common form of septic arthritis in the United States. The organism can seed in the joint when the bacteria disseminates and presents with rapid onset of significant joint pain, often with swelling, redness and warmth of the joint.

Tenosynovitis
Tiny-snowmen
Tenosynovitis is inflammation of the synovium that surrounds a tendon. Individuals with tenosynovitis have symptoms of swelling, pain, and difficulty moving the specific joint where inflammation occurs. Tenosynovitis can occur in disseminated gonococcal infections.

Pustules On Hands And Feet
Pustules on Hands
Individuals with disseminated gonococcal infections can present with a painless non-pruritic dermatitis. This often presents as pustules on the hands and feet.

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Treatment

Ceftriaxone
Chef-tri-axes
Ceftriaxone is a third generation cephalosporin that is used in the treatment of Neisseria gonorrhoeae.

Azithromycin
Zipper-mice
In order to ensure treatment of common co-occuring pathogens like chlamydia as well as growing concerns about emerging gonococcal resistance, the CDC recommends combination therapy with ceftriaxone 250 mg intramuscularly, and either azithromycin 1 g orally as single dose, or doxycycline 100 mg orally twice daily for 7 days as the most reliably effective treatment for uncomplicated gonorrhea.

Doxycycline
Dachshund-cycling
In order to ensure treatment of common co-occuring pathogens like chlamydia as well as growing concerns about emerging gonococcal resistance, the CDC recommends combination therapy with ceftriaxone 250 mg intramuscularly, and either azithromycin 1 g orally as single dose, or doxycycline 100 mg orally twice daily for 7 days as the most reliably effective treatment for uncomplicated gonorrhea.

Considerations

C5-9 Complement Deficiency (Recurrent Infections)
C5-9 Computer
Individuals with a C5-9 complement deficiency are particularly vulnerable to disseminated Neisseria infections with encapsulated bacteria.

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