

GONORRHEA – SEXUALLY TRANSMITTED INFECTION

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Abstract. *Neisseria gonorrhoeae* is the cause of gonorrhoea, a sexually transmitted disease that affects women, men and children. Every year, there are about 1 million cases reported worldwide, while an almost identical number of cases is not reported. The prevalence of gonorrhoea: 5% of the vaginal infections are caused by sexual transmission, being predominant at ages between 15 and 30 (80%). The medical and social consequences are significant; they can cause infertility in women and it is a major favourable factor for HIV infection. The study offers an open perspective for the physician dealing with sexually transmitted infections regarding the judicious use of investigations for an early detection of the infection, for applying the appropriate treatment in order to reduce successfully the eventual sequelae and to change the sexual behaviour as prevention of reinfection.

INTRODUCTION

Gonorrhoea is a sexually transmitted disease caused by the bacteria called *Neisseria gonorrhoeae*. This bacterium can develop and multiply in moist warm areas of the reproductive tract, cervix, uterus and the fallopian tubes, and in the urethra in both genders (Morgan, M.K., Decker, C.F., 2016). The symptoms can include the following: a yellow-greenish liquid viscous discharge through the external genital organs, pain on urination and abnormal uterine bleeding. Often, the patients do not show symptoms, but they can spread the disease and infect other people easily. The infection does not create immunity; relapses can occur any time. Untreated infections can lead to infertility, inflammation in the pelvic area and can be transmitted to foetuses during pregnancy. Conservative estimates of health care costs are 16 billion dollars annually (Decker, C.F., 2016).

In 2011, there were 525 cases of gonorrhoea recorded nationwide (National Institute of Statistics, 2016). Risk factors: the rate of infection with one act of intercourse with an infected partner is 20% for men and up to 60% for women, this rate increases to 80% for both sexes with more exposure. The groups with the highest risk are adolescents (15-19 years), drugs users and sex workers. For every 3 men infected, 2 women are hospitalized for 1 or more day, for every 18 men infected, 1 woman undergoes surgery. It was estimated that one episode of gonorrhoea is associated with a 15% infertility rate; this increases to 75% for 3 or more infection. The risk of an ectopic pregnancy is increased 7 to 10 times in women with a history of salpingitis (Smith, R.P., 2015).

PURPOSE AND OBJECTIVES

World Health Organization (WHO) representatives claim the fact that gonorrhoea has become more and more difficult to treat because the bacterium causing it has become resistant to the antibiotics used presently, so they have made the decision of revising protocols and exposed, for the first time, a series of recommendations for the moment when no medicine will work. The purpose of the study is to inform the population on the causes of the infection, the risk factors and complications that can occur without proper treatment.

MATERIAL AND METHODS

Symptom detection is very difficult in many cases. Thus, some people can be infected for a long time without showing symptoms. Most asymptomatic people will only find out that they are infected when their partner is diagnosed. The only certain method of detecting the infection is testing (urethral or vaginal discharge cultures) for gonococci infection (CDC, 2007; Holder, N.A., 2008).

Diagnosis is based on vaginal or urethral discharge cultures. In order to harvest these discharges you can use a sterile cotton swab that is sent to the lab for testing. The results are available in about 48 hours. The harvesting is not painful and it can be performed even for asymptomatic people. (CDC, 2007; Holder, N.A., 2008; Wong B., 2013; Workowski, K.A., Bolan, G.A., 2015).

RESULTS AND DISCUSSION

Study group: 15 patients hospitalized in 2015 in the Clinic of Obstetrics Gynaecology of "Elena Doamna" Hospital Iași, with vaginal infections that were bacteriologically confirmed of having *Neisseria gonorrhoeae* and who agreed to enter the study.

Prevalence: 5% of the vaginal infections were sexually transmitted infections in which *Neisseria gonorrhoeae* was identified.

Demographic characteristics:

The groups with the highest risk are adolescents (46.7%; 15-19 y) and young female (33.3%; 20-29 y).

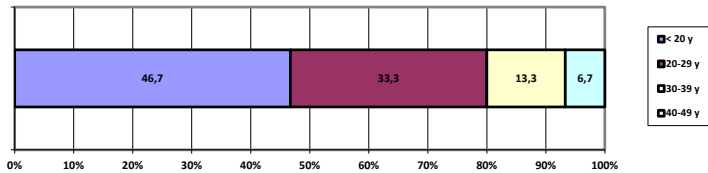


Fig. 1. Age distribution in patients with gonorrhoea

9/15 patients are married.

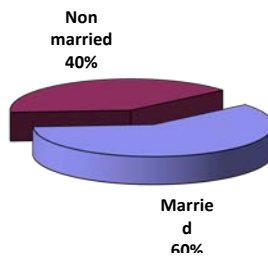


Fig. 2. Marital status distribution in patients with gonorrhoea

Causes: infection by gram-negative intracellular diplococcus, *Neisseria gonorrhoeae*.

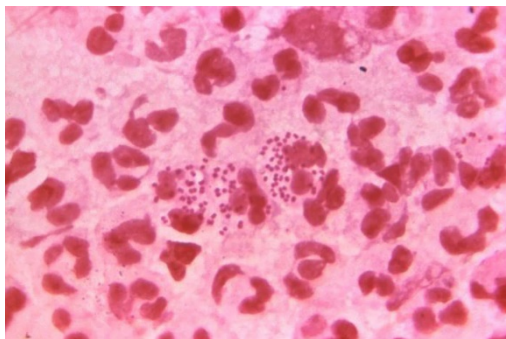


Fig. 3. *Neisseria gonorrhoeae*, the causative agent of gonorrhoea, a specific, contagious, catarrhal inflammation of the genital mucous membrane of either sex (personal collection)

Signs and symptoms:

- asymptomatic – 50%;
- 3 to 5 days after exposure appear malodorous, purulent discharges from the urethra, Skene duct, cervix, vagina or anus – 55%;
- simultaneous urethral infection – 70%;
- infection of the pharynx – 10%.

Differential diagnosis:

- pelvic inflammatory diseases – 73.3%;
- mucopurulent cervicitis – 40%;
- chronic pelvic pain – 40%;
- chlamydial infection – 33.3%;
- infertility – 20%;
- endometritis – 13.3%;
- ectopic pregnancy – 6.7%.

Laboratory evaluation:

Ultrasonography demonstrates free fluid in Douglas “*cul de sac*” when pelvic inflammation is present.

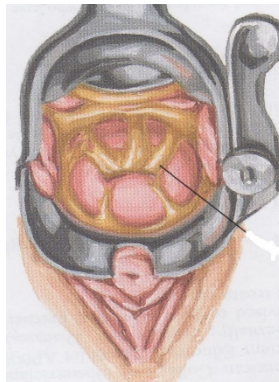


Fig. 4. Purulent cervical discharges of gonorrhoea (Smith, R.P., 2015)

Culture on Thayer-Martin agar platelets kept in CO₂-rich environment. Cervical cultures provide 80% cervical diagnostic sensitivity. A gram stain of any cervical discharge for the presence of gram-negative intracellular diplococcus supports the presumptive diagnosis, but does not establish it: sensitivity 60%, specificity 90%.

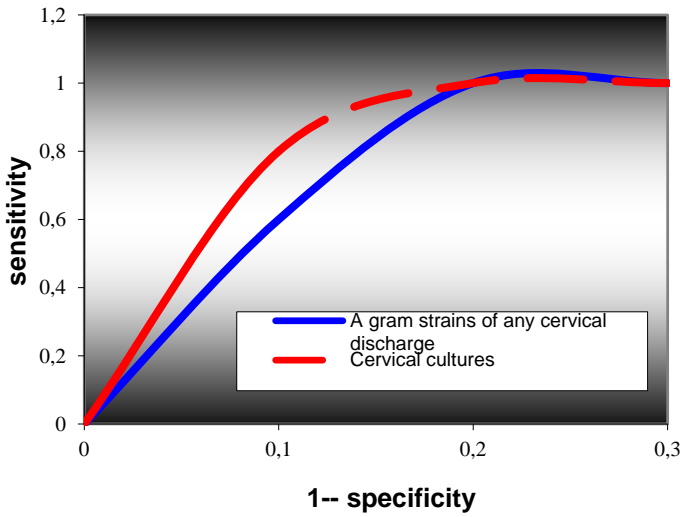


Fig. 5. Sensitivity and specificity of cervical diagnostic of gonorrhoea

Antibiotic therapy resistance

The DST showed a reduced or intermediate resistance of *Neisseria gonorrhoeae* strains to first-line antibiotics used to treat gonorrhoea.

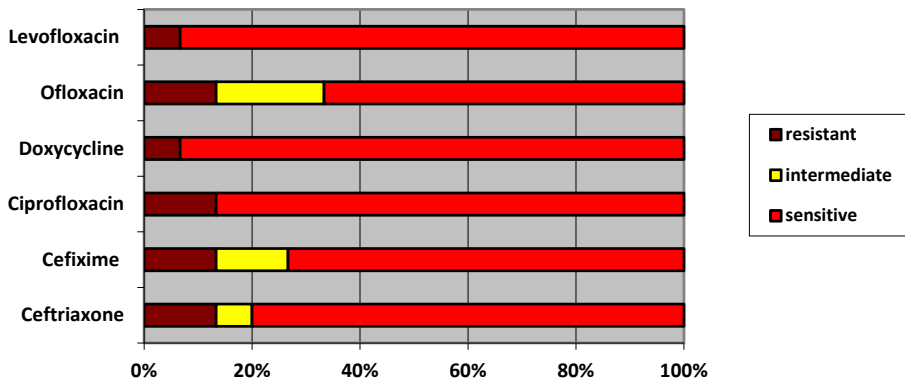


Fig. 6. Sensitivity / resistance to antibiotics for *Neisseria gonorrhoeae* strains

Treatment

Aggressive antibiotic therapy is instituted in patients suspected of having an infection (Hranjec, T., et al., 2012).

Table I. Antibiotic therapy in patients with gonorrhoea

Antibiotics	Doses	Administration
Ceftriaxone	25 mg	Intra-muscle, single dose

Cefixime	400 mg	Orally, single dose
Ciprofloxacin	500 mg	Orally, single dose
Ofloxacin	400 mg	Orally, single dose
Levofloxacin	250 mg	Orally, single dose

No specific dietary changes indicated.

Sexual continence is required until the infection has resolved.

Patients should be advised to have all sexual partners seen for diagnosis and treatment.

Follow-up

The patients were re-examined 2 months post treatment.

In patients treated with ceftriaxone-doxycycline, therapy failure was rare (6.7%); a follow –up culture was not necessary.

CONCLUSIONS

In early detection of gonorrhoea, the treatment can be successful, with minimum consequences. Despite the treatment, the prognostic can be unfavourable because of non-compliance with treatment, repeated infections, a late start of therapy and the fact that *Neisseria gonorrhoeae* strains can become resistant to antibiotics.

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