Gonorrhea Fact sheet

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**Introduction**

Gonorrhea is an STI (sexually transmitted infection) which is caused by the bacterium Neisseria gonorrhoeae. Gonorrhea grows easily in moist and warm sections of the reproduction tract compromising the uterus, fallopian tubes and cervix in women and in the urethral canal of the men. The bacterium also grows in the anus, eyes, throat, and mouth (Danby et al. 2016).

**Symptoms and incubation period**

Most of the people infected do not have the symptoms in both female and male. The main symptoms in men comprise of yellow, green or white discharge from the penis that appears 1-14 days after being infected. Men get swollen or painful testicles and have burning when urinating. The women do not usually have symptoms and when they have it is mostly mild and could be mistaken for vaginal or bladder infection (Didelot *et al.,* 2016). Women experience burning when urinating, pelvic pains, get vaginal bleeding between periods, vaginal discharge. Women may get complications compromising of the pelvic inflammatory disease while the men experience epididymis inflammation. When left untreated, gonorrhea could spread to the heart valves or joints. Women have greater chances of developing severe complications from gonorrhea compare to men even when the symptoms are mild or not present. Symptoms of the rectal infection in both women and men compromise painful bowel movements, bleeding, soreness, anal itching, and discharge. Rectal infections may not have any symptoms. Throat infections might cause sore throat however mostly there are no symptoms.

**Transmission**

Gonorrhea is transmitted via sexual contact with the infected person. It compromises vaginal, anal, and oral sex. During childbirth, it can be spread to the child from the mother.

**Diagnosis**

The disease diagnosis is conducted by testing the urine, cervix in female and urethra in males (Didelot *et al.,* 2016). Women are recommended to get tested every year plus those having new partners the same recommendation applies to men engaging in sex with other men.

**Prevention and Treatment**

The disease can be prevented via the use of condoms, abstinence from sex and engaging in sexual activity with a person who is uninfected. Treatment is mostly done with ceftriaxone through injection or with azithromycin through the mouth (Danby et al. 2016). Resistances to the disease have developed to most used antibiotics previously and greater doses of the ceftriaxone are frequently needed. Retesting is required following three months after the treatment. The sexual partners from the last two months are required to be treated.

**Control Measure for Gonorrhea Outbreak**

In the case of gonorrhea outbreak, effective control measures are needed to be put in place. From research, coordinated efforts in five major areas are needed: reliable data for guiding decision making, primary prevention plus access to prevention means, suitable epidemiologic targeting, provision of the needed clinical services to reduce the infectivity duration and creating an environment for prevention (Didelot *et al.,* 2016).The clinical services are categorized as the STI management method for the symptomatic patients, partner strategies and screening for the asymptomatic infections. All need to be supported by the required efforts for counsel, education, and provision for the means like condoms for the prevention of infections. STI control is not attained by clinical interventions only. Primary interventions compromise those taking place at the clinic and outside the clinic and where the STI transmission happens. The interventions concentrate on the means of prevention, referral and information to the clinical services.

**Research**

Zielke et al., (2016) conducted a study on the proteomics-driven antigen discovery for the advance of vaccines against gonorrhea. The study is important because it helps in the prevention of gonorrhea infection. They stated that advancement efforts for the development of the preventive gonorrhea vaccine are important because of the possibility of the emergence of untreatable gonococcal infections. The reverse vaccinology which compromises proteome and genome mining has been successfully in the establishment of the vaccine candidate against the pathogenic bacteria. Nevertheless, advancement with this approach for the gonorrhea vaccine has remained at the infancy. Zielke et al., (2016) applied the comprehensive proteomic platform for the identification of the probable gonococcal vaccine antigens. The researchers had previously concentrated on the cell envelopes and released naturally the membrane vesicles derived from various strains of Neisseria gonorrhoeae. In this study, they advanced the study to identify the cell proteins of Neisseria gonorrhoeae which are expressed ubiquitously and particularly induced by the physiological relevant environmental stimuli: human serum, iron deprivation and oxygen availability. The research allowed the identification of the various probable gonorrhea vaccine targets. The initial characterization of the five novel vaccine candidate antigens was expressed in dissimilar growth environments showed that homologous TamA, LptD, BamA and two uncategorized proteins exposed on the surface, secreted through membrane vesicles and plus bactericidal antibodies which cross-reacted with the pane of geographically and temporarily diverse isolates. Additionally, analysis of the polymorphisms at the amino acids and nucleotide levels indicated that the vaccine candidates were greatly conserved among the strains of Neisseria gonorrhoeae. Ultimately depletion of the BamA leads to the loss of the viability of N. gonorrhoeae indicating it might be the essential target. The data showed support of proteomics-driven discovery of the probable vaccine targets as the sound approach for the identification of the promising gonococcal antigens.

**Conclusion**

In conclusion, gonorrhea is an STI (sexually transmitted infection) which is caused by the bacterium Neisseria gonorrhoeae. Most of the people infected do not have the symptoms in both female and male. The main symptoms in men comprise of yellow, green or white discharge from the penis that appears 1-14 days after being infected. Gonorrhea is transmitted via sexual contact with the infected person and it compromises vaginal, anal, and oral sex. The disease diagnosis is conducted by testing the urine, cervix in female and urethra in males.

References

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