

ABSTRACT

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Title of diploma thesis: The development of antibiotic resistance of *Neisseria gonorrhoeae* in University Hospital Brno

This thesis deals about the bacteria *Neisseria gonorrhoeae* (*N. gonorrhoeae*), agents of sexually transmitted disease gonorrhea. In the first part there are basic characteristics of the bacteria and its growth, virulence factors, mechanisms of resistance and its diagnostic options and also its ability to develop an antibiotic resistance, pathogenesis of disease, its progress and symptoms and, ultimately, treatment options of disease.

Practical part contains a basic process of an income of clinical sample, a laboratory culture, an isolation of strains and possibilities of a biochemical identification and an antibiotic susceptibility testing. There are also the statistical informations obtained from the Department of Clinical Microbiology at the University Hospital Brno since the year 1998 to 2012. They are arranged into a tabular and graphical form, showing increased incidence of disease in the population, especially in men. They shows distribution incidence of disease across age groups and type of clinical sample. During the last 15 years the incidence of gonorrhoea increased and the antibiotic resistance of *N. gonorrhoeae* has change (penicilin has 50 % of resistance strains, tetracyklin 42 % and ciprofloxacin has 75 % in year 2012). The results are alarming because of occurring of the resistance to the third generation cephalosporins, what are nowadays antibiotics of the first choice. The increasing incidence of gonorrhoea and the increasing percentage of resistance are the main factors that may significantly affect the success of the clinical treatment. The increase in resistance makes gonorrhoea difficult to treat disease, because there is a global spread of resistant strains.