Curriculum
Dental medicine, 2nd year, 1st semester
Bacteriology

Lectures
14 weeks x 2 hours

1. History of microbiology. The object and purpose of medical microbiology. Bacterial morphology.
2. The structure of the bacteria. The chemical composition of the bacteria. Bacterial metabolism. The growth and multiplication of bacteria. Activity of physical, chemical and biological agents (antibiotics, bacteriocins, bacteriophage) on bacteria.
3. Bacterial Genetics. Bacterial variability. Infective process. Pathogenicity of bacteria.
4. Classification and nomenclature of bacteria. Gram-positive cocci (Staphylococcus, Streptococcus, Enterococcus). Gram-negative cocci (Neisseria meningitidis and Neisseria gonorrhoeae).
5. Gram-positive aerobic rods: Genus Corynebacterium. Genus Bacillus. Gram-negative aerobic, facultative anaerobic bacteria: Enteric pathogens: Escherichia, Shigella, Salmonella, Yersinia, Klebsiella, Proteus.
6. Curved Gram-negative bacteria: Genus Vibrio. Genus Campylobacter. Genus Helicobacter. Non-fermentative, aerobes, Gram-negativi bacilli: Pseudomonas aeruginosa. Gram-negative coco-bacilli: Haemophilus influenzae
7. Spore-forming Gram-positive, anaerobic bacteria (Clostridium). Non-spore-forming anaerobic bacteria
8. Bacteria that are not classified as Gram: Mycobacterium genus. Spirochetes: Treponema pallidum. Borrelia burgdorferi (TBL)
9. Normal flora of the human body. Normal flora of the oral cavity. Oral ecosystem. Characteristics of dental plaque biofilm (Interdisciplinary course).
10. Microflora involved in periodontal disease
11. Microbial flora involved in dental caries
12. Etiology of dentoalveolar infections.
13. Etiology of infections of the mouth and salivary glands.
14. Etiology of iatrogenic infections in relation to practice in dental offices (TBL)

Practical classes
14 weeks x 2 hours

1. Labor safety in the laboratory. Decontamination. The bacteriological diagnosis scheme. The harvesting and transport of pathological samples
2. Study of the bacterial morphology. Wet mount. Smears. Simple and Gram staining. Ziehl-Neelsen staining. Neisser staining.
3. The cultivation of microorganisms. Culture media. Methods of seeding. Macroscopic aspects of bacterial culture. Bacterial identification based on biochemical and metabolism characteristics.
4. Identification of the bacteria by their antigenic structure: agglutination, ELISA, IF. Intradermic reactions. Detection of nucleic acids - hybridization, gene amplification. Bacterial typing. Bacterial pathogenicity testing in vitro and in vivo (experimental disease). Antibiotic susceptibility testing – Antibiogram
5. Seminar
6. Laboratory diagnosis of infections caused by Staphylococcus, Streptococcus, Enterococcus, Neisseria.
7. Laboratory diagnosis of infections caused by enterobacteriaceae: Escherichia, Klebsiella, Proteus, Shigella, Salmonella, Yersinia. Laboratory diagnosis of infections caused by Vibrio, Helicobacter, Campylobacter.
8. Laboratory diagnosis of infections caused by Pseudomonas, Treponema, Mycobacterium, Clostridium.
9. Laboratory diagnosis of infections caused by endogenous anaerobic bacteria.
10. Normal flora of the oral cavity. Quantitative assessment of lactobacilli in the mouth.
11. Antimicrobial activity of dental materials and toothpaste.
12. Microbial flora in periodontitis. Microbiology of dental caries.
13. Recovery of missed classes.
14. Seminar

Bibliography

1. Brooks G.F., Butel, J. S., Morse, S.A.: Jawetz, Melnick, Adelberg's Medical Microbiology, 23 rd
2. edition. 2006
3. Koneman: Color Atlas and Textbook of Diagnostic Microbiology, Lippincott, 2006
4. Murray, P.R., Rosenthal, K.S., Kobayashi, G.S., Pfaller, M.A.: Medical Microbiology, Fourth Edition. Mosby 2002.
5. Samaranayake, L: Essential Microbiology for Dentistry. Churchill Livingstone, Elsevier, 2006
6. Marsh, P.D., Martin, M.V.: Oral Microbiology Fifth edition.Churchill Livingstone, Elsevier, 2009
7. http://microbiologie.umftgm.ro; e-learning ROELME