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COMPARATIVE STUDY OF ANTIMICROBIAL SUSCEPTIBILITY PATTERNS OF *STAPHYLOCOCCUS AUREUS* ISOLATES FROM TWO VILNIUS CITY HOSPITALS AMONG DIFFERENT SPECIMEN SOURCES

Authors. Greta BLÖMER, III course, Elzė VAITKEVIČIŪTĖ, III course.

Supervisors. Assoc. Prof. Agnė KIRKLIAUSKIENĖ, Aušrinė ŽEMAITIENĖ, Department of Physiology, Biochemistry, Microbiology and Laboratory Medicine, Institute of Biomedical Sciences, Faculty of Medicine, Vilnius University; Dr Greta VIZUJĖ, Kotryna SAULIŪNĖ, Department of Laboratory Diagnostics, Republic Vilnius University Hospital, Vilnius, Lithuania; Dr Jolanta MICIULEVIČIENĖ, Živilė KUČINSKIENĖ, Laboratory Medicine Centre, Vilnius City Clinical Hospital, Vilnius, Lithuania.

Background. *Staphylococcus aureus* is an important pathogen in both community- and hospital-acquired infections. Monitoring antimicrobial susceptibility is essential because *S. aureus* rapidly develops resistance to antibiotics.

Aim. To compare antimicrobial susceptibility patterns of *Staphylococcus aureus* isolates between two Vilnius city hospitals and across different clinical specimen sources.

Materials and methods. *S. aureus* strains were isolated from clinical specimens collected in Hospital 1 and Hospital 2 during 2025. Repeated isolates from the same patient were excluded. Collected specimens were assigned into five groups: blood, respiratory tract, skin and soft tissue, urine and others. Antimicrobial susceptibility was tested for ceftiofloxacin (30 µg), erythromycin (15 µg), clindamycin (2 µg), tetracycline (30 µg), gentamicin (10 µg), penicillin (1 U), norfloxacin (10 µg), linezolid (10 µg), rifampicin (5 µg), fusidic acid (10 µg), and trimethoprim-sulfamethoxazole (25 µg) using the disc diffusion method according to EUCAST (2025) guidelines. The reference strain *Staphylococcus aureus* ATCC® 29213™ was used to ensure the reliability of the susceptibility testing.

Results. A total of 361 *S. aureus* specimens were examined, including 164 from Hospital 1 and 197 from Hospital 2. Respiratory tract specimens were more common in Hospital 1 than in Hospital 2 ($p = 0.008$), whereas the proportion of blood samples did not differ significantly ($p = 0.077$). Penicillin susceptibility was significantly lower in Hospital 2 (25.4%) than in Hospital 1 (36.0%) ($p = 0.029$). No significant differences were observed between hospitals in susceptibility to erythromycin, norfloxacin, ceftiofloxacin, clindamycin, fusidic acid, or trimethoprim-sulfamethoxazole ($p > 0.05$). Ceftiofloxacin resistance indicated MRSA rates of 12.8% in Hospital 1 and 15.2% in Hospital 2.

Conclusions. Penicillin susceptibility was low in both hospitals, but significantly lower in Hospital 2. MRSA rates were similar in both hospitals. Continuous surveillance of *S. aureus* antimicrobial susceptibility is needed not only to guide antimicrobial therapy but also to monitor antibiotic resistance.

Keywords. *Staphylococcus aureus*; antimicrobial susceptibility; MRSA; EUCAST.