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83rd INTERNATIONAL SCIENTIFIC CONFERENCE ON MEDICINE AND HEALTH SCIENCES OF THE UNIVERSITY OF LATVIA: INTERNAL AND CARDIOVASCULAR MEDICINE

On 25 April 2025, the University of Latvia in Rīga is hosting the International Scientific Conference on Medicine organised within the frame of the 83rd International Scientific Conference of the University of Latvia (see for details: Leja, M., Stonāns, I. 83rd International Scientific Conference on Medicine and Health Sciences of the University of Latvia: Basic Medical Science and Pharmacy, p. 19, this issue).

The "Internal and Cardiovascular Medicine" section includes a broad and interdisciplinary collection of abstracts reflecting important clinical and scientific developments in the fields of internal medicine, cardiovascular health, metabolic and autoimmune diseases, and infection management.

Within the area of diabetes and metabolic disorders, the studies provide insights into the interactions between chronic hepatitis C infection and type 2 diabetes, highlighting mechanisms of insulin resistance and glycaemic control challenges. Age-related cardiovascular complications in diabetics are analysed, highlighting the increased risks and necessary preventive strategies in elderly patients. Machine learning-based predictive modelling is applied to diabetes risk, validating the significance of BMI and HbA1c as predictors, thus underscoring the importance of precise and early interventions. Additionally, post-transplantation diabetes mellitus in kidney transplant recipients and continuous glucose monitoring studies reveal novel risk factors and early markers of disease progression, illustrating the need for targeted clinical management and personalised patient care strategies.

The autoimmune and inflammatory conditions cluster highlights advancements in the understanding of complex autoimmune pathologies and their diagnostic profiles. Studies investigate associations between autoantibodies, interstitial lung disease, systemic sclerosis, and systemic lupus erythematosus, emphasising the diagnostic utility of antibody profiles combined with imaging and capillaroscopy data. Furthermore, research on autoimmune liver diseases highlights the high prevalence and significance of concurrent extrahepatic autoimmune diseases and underscores the need for comprehensive diagnostic and treatment protocols in clinical practice.

In cardiovascular medicine, several abstracts present sophisticated prediction models for atrial fibrillation utilising clinical medication data, thereby advancing patient risk stratification and preventive care. Additional contributions focus on heart failure patient profiling, exploring the clinical, biochemical, and echocardiographic characteristics essential for precise clinical assessment. Metabolic and hormonal disorders such as acromegaly are also evaluated, focusing on treatment effectiveness and metabolic comorbidities, further enhancing the understanding of disease management and patient prognosis.

Gastrointestinal and kidney disease management studies address clinical challenges and therapeutic outcomes. Investigations on gastroesophageal reflux disease provide insights into age-related clinical presentations, enhancing patient-specific diagnostic approaches. Additionally, studies on colorectal polyps emphasise early detection through improved screening methods, while research on malnutrition prevalence in dialysis patients stresses the importance of nutritional management to reduce adverse health outcomes. The significant impact of haemodialysis on patient employment and quality of life high-lights the broader socioeconomic implications of chronic kidney disease treatment.

Finally, research in infectious diseases examines critical care quality indicators, notably in managing *Staphylococcus* aureus bacteraemia, assessing adherence to treatment protocols, and evaluating patient outcomes. Antimicrobial stewardship initiatives through regular ward rounds demonstrate measurable improvements in antibiotic use and clinical outcomes, reinforcing the importance of multidisciplinary and educational approaches in healthcare practice.

Collectively, these abstracts illustrate the complex research activities that have implications for improving clinical outcomes, promoting innovative diagnostic techniques, and advancing patient-centred care across the disciplines of internal and cardiovascular medicine.

Ilmārs Stonāns

Conclusions. Hospital mortality for SAB is higher than reported in published data. Adherence to QC has statistically improved over the years and the bacteremia surveillance monitoring system has facilitated the timelier initiation of

antistaphylococcal therapy. The study identified additional factors affecting mortality as high rates of an unknown source of infection, delays in initiating empiric antibiotic therapy in CA-SAB septic patients.

IN VITRO ACTIVITY OF CEFIDEROCOL AGAINST ACINETOBACTER BAUMANNII CLINICAL ISOLATES IN A VILNIUS (LITHUANIA) HOSPITAL

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Background. Cefiderocol is a novel siderophore cephalosporin with enhanced ß-lactamase stability and significant potential in treating resilient Gram-negative bacterial infections. Extensive research has highlighted the high efficacy of cefiderocol against multidrug-resistant *Acinetobacter baumannii*. Since its introduction in Lithuanian hospitals in 2024, it has been employed as a last-resort antibiotic to manage infections caused by such strains. However, recent studies have raised concerns that nosocomial *Acinetobacter* strains may be developing resistance to this newly introduced antibiotic, underscoring the need for continued surveillance and further investigation.

Aim. This study aimed to determine the susceptibility of clinical *A. baumannii* strains to cefiderocol.

Methods. *A. baumannii* strains were collected from the beginning of 2018 to the end of 2023 and stored at -70 °C. Collected specimens were assigned into four groups: blood, respiratory tract, skin and soft tissues, and urine. The *A. baumannii* clinical isolates were identified with the MALDI-TOF VITEK® MS Microbial Identification System (bioMérieux, France). All stored strains were inoculated onto Columbia agar & Horse Blood (*EO Labs*, Ireland) and aerobically incubated for 24–48 h at 35 ± 2 °C. Each strain's 0.5 McFarland standard suspension was prepared and inoculated on Muller-Hinton agar (Bio-Rad, France). Susceptibility to cefiderocol was determined using the gradient method (MTSTM cefiderocol FDC 0.016-256 μ g/ml) (Liofilchem®, Italy). For quality control, *Pseudomonas aeruginosa* ATCC®27853TM was used (EUCAST 2025).

Results. The study included 128 patients from whose specimens *A. baumannii* were isolated. 63.3% of patients were male, and 36.7% were female. The youngest study participant was 18 years old, and the oldest was 98 years old. The mean age of the participants was 71.4 years. 95.3% (n = 122) of the tested *A. baumannii* strains exhibited susceptibility to cefiderocol with MIC ≤ 0.5 mg/l. However, six (4.7%) strains demonstrated MIC between 1–2 mg/l, suggesting the acquisition of resistance mechanisms that may compromise clinical efficacy.

Conclusion. The study did not detect cefiderocol-resistant (MIC > 2 mg/l) *Acinetobacter baumannii* strains; however, six isolates with intermediate susceptibility (MIC 1–2 mg/l) were identified in clinical samples. This finding signals a concerning trend of emerging multidrug resistance among *A. baumannii* isolates within Lithuanian healthcare settings. Given the critical role of *A. baumannii* as a prevalent nosocomial pathogen, the detection of reduced susceptibility to cefiderocol, a novel last-resort antibiotic, underscores the need to mitigate the development and dissemination of resistance mechanisms and to strengthen antimicrobial stewardship measures.

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