ქართველი მეცნიერები

Georgian Scientists

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Georgian Scientists

ქართველი მეცნიერები

The issue is dedicated to the abstracts of the conference: International School-Conference in Emergency Medicine and Intensive Care: Addressing Key Interdisciplinary Issues to Save Lives

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12-14 November, 2026

November 12–13, 2026 | Paragraph Tabori Hotel, Nadikvari II

November 14, 2026 | Tbilisi State Medical University, Vazha Pshavela av. N33

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The conference is funded by the Shota Rustaveli National Science Foundation of Georgia

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Program

12 November 2026 – DAY I

Hotel "Paragraph Tabor, Tbilisi, Georgia

DAY I – OPENING, GLOBAL PERSPECTIVES AND CRITICAL CARE INNOVATION

Time	Speaker	Topic
9:00 – 10:00	**Registration**	
10:00 – 11:00	**Irakli Natroshvili –** Rector of Tbilisi State Medical University, Professor **Givi Mikanadze –** Minister of Education, Science and Youth of Georgia **Mikheil Sarjveladze -** Minister of Internally Displaced Persons from the Occupied Territories, Labour, Health and Social Affairs of Georgia **Mariam Lashkhi** – Chair of the Education, Science and Youth Affairs Committee of the Parliament of Georgia **Zaza Lominadze -** Chair of the Healthcare and Social Issues Committee of the Parliament of Georgia **Teimuraz Dochviri -** General Director of the Rustaveli Foundation **Levan Ratiani -** General Director of First University Clinic, TSMU; Professor, Head of Anesthesiology, Reanimatology and Toxicology Department, TSMU **Professor Maria Theodorakopoulou –** President-Elect, European Society of Intensive Care Medicine (ESICM), Vice-President, Hellenic Society of Intensive Care Medicine (HSICM); Visiting Professor of TSMU **Professor Alexander Lezhava -** Head of Centre for Genome Diagnostics; Associate Director, HBRO; Genome Institute of Singapore, Agency for Science, Technology and Research; Platform Lead, Singapore Translational	Official Opening of the Conference and Welcome Addresses Presentation: Why Does the Heart Stop? Between Physiology and Eternity: A Question Beyond Clinical Protocols Welcome Address Welcome Address

	Cancer Consortium, Honorary Doctor of TSMU **Irina Imerlishvili -** Rector of BAU International University. **Moderator: Luiza Gabunia –** Professor, Head of Clinical Pharmacology Department, TSMU	Welcome Address
10:45-11:00	**Break**	
11:00 – 13:00	**Opening Plenary Session – The Future of Emergency and Critical Care: From Evidence-Based Medicine to Saving Lives** (Conference Hall N1) **Keynote Lectures and Review of Contemporary Advances**	

	Professor Maria Theodorakopoulou – President-Elect, European Society of Intensive Care Medicine (ESICM), Vice-President, Hellenic Society of Intensive Care Medicine (HSICM); Visiting Professor of TSMU	The future of Intensive Care in Europe - Challenges and Opportunities
	Professor Arzu Topeli (İskit) – Internal Medicine, Intensive Care Medicine; Dean, Hacettepe University Faculty of Medicine, Ankara, Türkiye	Long-Term Consequences of Critical Illness and ICU Care: Post-Intensive Care Syndrome
	Professor Despoina Koulenti – King's College Hospital, London, UK; University of Thessaly, Greece; The University of Queensland, Australia; Chair, ESCMID SG for Infections in Critically Ill Patients (ESGCIP)	Optimization of Antibiotic Dosing in Critically Ill Patients
	Christie Fritz – EMS Division, Emergency Medicine, Beth Israel Deaconess Medical Center; Assistant Professor of Emergency Medicine, Harvard Medical School; Medical Director, BIDMC Ambulance Service**;** Medical Director, USA	Prehospital Management of Sepsis
	Professor Alexander Lezhava - Head of Centre for Genome Diagnostics; Associate Director, HBRO; Genome Institute of Singapore, Agency for Science, Technology and Research; Platform Lead, Singapore Translational Cancer Consortium, Honorary Doctor of TSMU	Molecular Diagnostics in Clinical Settings: Current Challenges and Achievements
13:00-14:00	**Coffee Break / Book Presentation**	
14:00 – 16:00	**Session №1 (Conference Hall №1)** **Critical Care Medicine 2026: Challenges, Innovations, and Personalized Approaches** **Moderators:** Professors - Arzu Topeli (İskit), Irma Chokhonelidze, Levan Ratiani	
	Professor Arzu Topeli (İskit) – Internal Medicine, Intensive Care Medicine; Dean, Hacettepe University Faculty of Medicine, Ankara, Türkiye.	Personalized Management of Sepsis
	Professor Irma Chokhonelidze – Head of the Department of Internal Medicine No. 2, Tbilisi State Medical University	Management of Acute Kidney Injury in the Intensive Care Unit
	Professor Maia Beridze – Head of the Department of Propedeutics and Topical Diagnosis of Neurological Diseases	Challenges and Achievements of Thrombolytic Therapy and Thrombectomy at the First University Clinic, TSMU
	Professor Tamar Didbaridze – Head of Microbiology Department, TSMU	The Role and Importance of Molecular Epidemiology in the Intensive Care Unit

	Professor Despoina Koulenti – King's College Hospital, London, UK; University of Thessaly, Greece; The University of Queensland, Australia; Chair, ESCMID SG for Infections in Critically Ill Patients (ESGCIP)	Rapid Diagnostics and Antimicrobial Stewardship (AMS): Early Treatment, Rapid Refinement, and Avoidance of Unnecessary Antibiotics
	Christie Fritz – EMS Division, Emergency Medicine, Beth Israel Deaconess Medical Center; Assistant Professor of Emergency Medicine, Harvard Medical School; Medical Director, BIDMC Ambulance Service**;** Medical Director, USA	Traumatic Hemorrhage and Massive Transfusion Protocols
	Mark Sutton-Smith – Visiting Professor of TSMU; Adjunct Clinical Associate Professor, Mohammed Bin Rashid University of Medicine and Health Sciences, Dubai, UAE; Mediclinic Parkview Hospital, Mediclinic Middle East, Dubai, United Arab Emirates	Beyond Glucose Control: The Impact of GLP-1 Receptor Agonists and Continuous Glucose Monitoring on Active Medical Care
	Professor Nika Kuridze – Head of Inpatient Unit of Cardiac Surgery Department, G. Chapidze Emergency Cardiology Center	Sudden Cardiac Death and the Role of Implantable Cardiac Devices in its Prevention
	Professor Luiza Gabunia – Head of Clinical Pharmacology Department, TSMU **Gvantsa Janigashvili –** Invited Lecturer, Clinical Pharmacology Department, TSMU	Antibiotic Therapy-Associated Risks in Critically Ill Patients
	Professor Iryna Romanava – Head of Clinical Pharmacology Department, Belarusian State Medical University, Minsk, Belarus	Rational Choice of Anticoagulants in Emergency Medicine
	Lia Goliadze – Head of Infectious Diseases Department, Vakhtang Bochorishvili Clinic	Sepsis in Patients with Severe Comorbidities
	Shota Goliadze, Ramaz Kalandadze – Physicians-Intensivists, First University Clinic, TSMU	Sepsis and Acute Respiratory Distress Syndrome – Management of Acute Respiratory Distress Syndrome in Pregnant Women
	Khatia Mikaberidze - Head Physician of the Laboratory Department at the First University Clinic, Invited Lecturer of TSMU, PhD Student of TSMU; **Professor Nino Gogokhia -** Head of the Department of Laboratory Medicine, First University Clinic, TSMU, Tbilisi, Georgia.	From Endothelium to Alveoli: A Biomarker Map of COVID -19-Induced Respiratory Cases
14:00 – 15:30	**Session №2** (Conference Hall №2) **Modern Aspects of Prehospital Management** Moderators: Professor Luiza Gabunia, Amiran Gogitidze, Gia Barabadze.	
	Gia Barabadze – Head of Emergency Medicine Department, First University Clinic, TSMU	Early Diagnosis and Management of Sepsis in the Emergency Department
	Amiran Gogitidze – Head of the Medical Department of Emergency Situations Coordination and Urgent Assistance Center	Kinematics of Trauma, Acute Injury Management, and Mass Casualty Triage

	Teimuraz Goletiani – Associate Professor of Radiology Department, TSMU	Modern Radiological Diagnosis of Stroke in Emergency Medicine
	Amiran Gogitidze – Head of the Medical Department of Emergency Situations Coordination and Urgent Assistance Center	Systematic Emergency Management and International Emergency Medical Team (EMT) Response to Natural and Technological Disasters
	Tamara Megrelishvili – Assistant Professor, Department of Infectious Diseases, TSMU	Febrile Conditions in Emergency Medicine
	Professor Gulnara Abashidze-Gabaidze – BAU International University, Batumi	Beyond Empirical Antibiotic Therapy: Diagnostic Stewardship, Rapid Diagnostics, and Targeted Antimicrobial Therapy in Primary Health Care
	Giorgi Chichua – Deputy Head of Emergency Situations Coordination and Urgent Assistance Center	Cardiac Arrest Management Algorithm According to the 2025 American Heart Association Update
	Levan Karazanashvili – Cardiac Surgeon	Acute Myocardial Infarction: When Do We Need a Cardiac Surgeon?!
	Shavleg Kutaladze – Assistant Professor, BAU International University, Batumi	Before the First Attempt: The Importance of Checklists in Airway Management of Critically Ill Patients
	Natia Kharati – Assistant Professor, BAU International University, Batumi	Nonconvulsive Status Epilepticus (NCSE) in Intensive Care: International Guidelines and Local Challenges
15:30 – 16:00	**Lunch**	
16:00 – 18:00	**Session №3** (Conference Hall №1) **Sepsis and Septic Shock** **Moderators:** Professors - Despoina Koulenti, Tamar Didbaridze; Associate Professor Elene Pachkoria	
	Professor Maria Theodorakopoulou – President-Elect, European Society of Intensive Care Medicine (ESICM), Vice-President, Hellenic Society of Intensive Care Medicine (HSICM); Visiting Professor of TSMU	Point-of-Care Testing (POC Testing): Current Gaps and Needs
	Jeni Jankhoteli – Reanimatologist of First University Clinic, TSMU	The Role of New Biomarkers in the Pathogenesis of Septic Shock
	Magda Rurua – Assistant Professor of Anesthesiology, Reanimatology and Toxicology Department, TSMU	Diagnostic Challenges and Clinical Course of Sepsis in Immunocompromised Patients
	Ivlita Khvedelidze – Anesthesiologist-Intensivist of First University Clinic, TSMU	Comparative Analysis of Infections Caused by Extensively Drug-Resistant *Klebsiella pneumoniae* and *Acinetobacter baumanii* in the Intensive Care Unit: Correlation of Laboratory Indicators with Disease Severity and Clinical Outcome
	Tinatin Gaphrindashvili –Anesthesiologist-Intensivist of First University Clinic, TSMU	Management of Post-Cesarean Section Sepsis
	Nino Totadze –Physician-Nutritionist of the First University Clinic, TSMU	Nutritional Peculiarities in Septic Patients
	Anna Archvadze – Associate Professor, Clinical Pharmacology Department, TSMU	Pathophysiological Factors Influencing Drug Effects in Critically Ill Patients
	Professor Luiza Gabunia – Professor, Head of Clinical Pharmacology Department, TSMU; **Shorena Khetsuriani –** Associate Professor of Microbiology Department, TSMU	Key Issues and Challenges in Rational Empirical Antibiotic Therapy for Sepsis

	Professor Tamar Sanikidze – Head of Physics, Biophysics, Biomechanics, and Information Technologies Department, TSMU	From Infection to Organ Failure: Mitochondrial Dysfunction in the Pathogenesis of Sepsis
	Gulnara Kiliptari – Associate Professor, Department of Anesthesiology, Reanimatology and Toxicology, TSMU	Sepsis-Induced Conditions
	Medea Gobejishvili – Associate Professor, Department of Ophthalmology, TSMU **Anano Sharashenidze –** Resident, Department of Ophthalmology, TSMU	Ocular Dirofilariasis: Clinical Cases
	George-Jemal Gogitidze - Associate Professor, Head of Scientific Research Direction, BAU International University Batumi, Georgia	Obstetric Sepsis and Septic Shock: Critical Care Resuscitation, Hemodynamic Stabilization, and Multidisciplinary Management
16:00-18:00	**Session №4** (Conference Hall N2) **Anesthesiology and Perioperative Management** **Moderators:** Professors - Maria Theodorakopoulou, Christie Fritz; Eka Khuchua.	
	Vakhtang Shoshiashvili – Assistant Professor of Anesthesiology, Reanimatology and Toxicology Department, Anesthesiologist-Reanimatologist of First University Clinic, TSMU	Lumbar Epidural Steroid Injection Approaches for Low Back and Radicular Pain: A Comparative Review of Transforaminal, Interlaminar, and Caudal Techniques
	Irakli Modebadze – Anesthesiologist-Reanimatologist of First University Clinic, TSMU	Endothelial Glycocalyx Protection in Modern Anesthesiology: from Basic Science to Clinical Practice
	Jano Oniani – Anesthesiologist- Reanimatologist of First University Clinic, TSMU	Delirium in the ICU: Prevalence, Risk Factors and Outcomes
	Ketevan Machavariani – Associate Professor of Anesthesiology, Reanimatology and Toxicology Department, TSMU **Tamar Shotadze** – Vice -Rector, Head of the Department of Clinical Skills, Petre Shotadze Medical Academy	Corticosteroids in Sepsis-associated Acute Respiratory Distress Syndrome
	Lia Dzidziguri – Associate Professor of Anesthesiology, Reanimatology and Toxicology Department, TSMU	Special Considerations for Anesthetic Care During Dental Procedures in Children with Disabilities
	Tsotne Samadashvili – Head of the Department of Anesthesiology and Operating Rooms, Caucasus Medical Centre; Associate Professor, Caucasus International University	Current Issues in the Anesthetic Management of Trauma-Induced Acute Respiratory Distress
	Ia Aghdgomelashvili – Head of the Anesthesiology Service and Operating Block Unit at the TSMU and Ingorokva High Medical Technology University Clinic, Assistant Professor.	Fluids or Vasopressors?! Hemodynamic Decision-Making in the Operating Room
	Stefane Chilingarashvili – Anesthesiologist-Reanimatologist of Telavi Regional Hospital	The Role of Point-of-Care Ultrasound in Modern General Anesthesia
	Gvantsa Kachlishvili – Anesthesiologist-Reanimatologist of "MediClubGeorgia" Clinic	New strategies of Patient Blood Management for Best Anesthesia Practice in Anemic Parturients
	Eka Khuchua – Anesthesiologist-Reanimatologist of First University Clinic, TSMU	Malignant Hyperthermia

13 November 2026 – DAY II

Hotel "Paragraph Tabor"

Time	Speaker	Topic
09:00-10:00	**Registration**	
10:00-12:00	**Session №5** (Conference Hall №1) **Antimicrobial Resistance and Stewardship** **Moderators:** Professor Despoina Koulenti, Lia Goliadze, Assistant Professor Tamara Megrelishvili	
	Thomas Musich – Scientific Director of the Walter Reed Army Institute of Research (WRAIR)	The Threat of Antimicrobial Resistance in Europe
	Davit Chakhunashvili –Epidemiologist of the National Center for Disease Control and Public Health	Management of Bloodstream Infections in ICU Patients Through Strengthening Modern Laboratory Systems
	Tamar Didbaridze – Professor, Head of Microbiology Department, TSMU	Diagnosis and Management of Fungal Infections in ICU Patients
	Elene Pachkoria – Associate Professor, Head of the Unit of Infectious Diseases of First University Clinic, TSMU	Fever in the Intensive Care Unit: The Role of New Biomarkers in the Early Diagnosis of Infection and Sepsis
	Professor Diana Dzidziguri – Head of the Department of Biology, Tbilisi State University	Thanatotranscriptome: Postmortem Gene Expression and Its Significance in Medicine
	Natia Phkhaladze - Obstetrician -Gynecologist of the First University Clinic; Associate Professor, Department of Obstetrics and Gynecology, TSMU	Antimicrobial Stewardship in Cesarean Delivery
	Maia Ugulava – Invited Lecturer, Caucasus International University, Tbilisi, Georgia. **Julie Ratchvelishvili** – Invited Lecturer, Caucasus International University, Tbilisi, Georgia.	Epidemiology of Critical Conditions and Intensive Care Outcomes: A Public Health Perspective
10:00-12:00	**Session №6** (Conference Hall №2) **Geriatric Critical Care** **Georgian Society of Gerontology** **Moderators:** Professor Teimuraz Lezhava, Associate Professor Nona Kakauridze, Nino Chumburidze, Honorary Doctor of TSMU	
	Professor Teimuraz Lezhava – Head of the Department of Genetics, Tbilisi State University; President of the Georgian Gerontological Society	Heterochromatin and NOR Alterations in Ductal Breast Cancer
	Nona Kakauridze – Associate Professor of Internal Medicine Department, TSMU, Cardiologist-Reumatologist	The Use of Cardiovascular Complication Markers in the Urgent Care Management of Long COVID
	Nino Didbaridze – Assistant Professor of the Immunology Department, TSMU	Geriatric Immunoparalysis: From Immune System Exhaustion to Sepsis Management
	Professor Maka Buleishvili – BAU International University, Batumi	Geriatric Medicine and Emergency Care: A Modern Approach to the Assessment, Management, and Safety of Older Patients

	Giorgi Nikolaishvili – Cardiologist at JSC Vian-Tbilisi Referral Hospital, Professor of Avicenna-Batumi Medical University	Features of Myocardial Infarction Management in Older Adults
	Gocha Barbakadze – Gastroenterologist of Enmedic Clinic, Associate Professor; **Manana Jebashvili** – Gastroenterologist, Head of the Postgraduate Gastroenterology Residency Program	Atypical Course, Complications and Treatment of Gastric and Duodenal Peptic Ulcer Disease in Older Adults
	Nino Khunashvili – Head of the Cardiology Service of First University Clinic, TSMU	The Role of PCSK9 in Cardio-Geriatric Patients
	Nana Egiashvili – Cardiologist, Radiologist of First University Clinic, TSMU	Significance of Galectin-3 and Echocardiographic Parameters in Predicting Long-COVID Complications in the Older Population (+60 years)
	Natia Archaia – Head of the Medical Team, Arensia Research Center, Cardiologist	The Role of Acquired Thrombophilia in Cardio-Cerebral Complications and Treatment Approaches in Aging
12:00-13:30	**Coffee Break**	
13:30-15:30	**Session №7** (Conference Hall №1) **Pediatric and Neonatal Critical Care** **Moderators:** Associate Professors - Nino Tskhvediani, Liana Dzidziguri; Tamar Goginashvili	
	Nazibrola Kibordzalidze – Neonatologist of Givi Zhvania Pediatric University Clinic, TSMU	Current Issues in the Postoperative Management of Necrotizing Enterocolitis Complicated by Short Bowel Syndrome in Neonates
	Giorgi Talakhadze – Pediatric Surgeon of Givi Zhvania Pediatric University Clinic, TSMU	Gastroschisis – An Old, not a New Problem
	Maia Abaloidze – Neonatologist of Givi Zhvania Pediatric University Clinic, TSMU	Resuscitation Measures in the Neonatal Intensive Care Unit
	Eka Nakhutsrishvili –Pediatrician of Givi Zhvania Pediatric University Clinic, TSMU	NR0B1-Related Adrenal Hypoplasia Congenita Presenting as a Neonatal Salt-Wasting Crisis: A Case Report
	Marina Jorbenadze – Neonatologist of Givi Zhvania Pediatric University Clinic, TSMU	Challenges of Smith-Lemli-Opitz Syndrome in the Neonatal Intensive Care Unit: A Case Report
	Julieta Kikvadze – **N**eonatologist-Reanimatologist, Head of the Neonatal Intensive Care Service, Givi Zhvania Pediatric University Clinic, TSMU	Neutrophil-Lymphocyte Ratio in Surgical Patients with Neonatal Sepsis
	Tamar Goginashvili – Head of the Critical Care Department; Anesthesiologist-Reanimatologist, Givi Zhvania Pediatric University Clinic, TSMU	Combined Congenital Malformations of Organ Development: Diagnosis and Management
	Christie Fritz – EMS Division, Emergency Medicine, Beth Israel Deaconess Medical Center; Assistant Professor of Emergency Medicine, Harvard Medical School; Medical Director, BIDMC Ambulance Service**;** Medical Director, USA	Inflight Emergencies
13:30-15:30	**Session №8** (Conference Hall №2) **Clinical Toxicology** **Moderators:** Associate Professor Ketevan Machavariani, Assistant Professor Eka Kurdadze, and Teimuraz Kobidze	

	Ketevan Bakhturidze – Clinical Toxicologist of the First University Clinic, TSMU	Methadone Poisoning in Georgia: Neurotoxicity, Cardiotoxicity, and Clinical Features of Multiple Organ Failure
	Giorgi Okriashvili – Head of the Internal Medicine Department at Rustavi Clinic, Toxicologist of Military Hospital and American Hospital Tbilisi	Damaging Effects of Nuclear Weapons on the Human Body
	Teimuraz Kobidze – Clinical Toxicologist, First University Clinic of TSMU	"Traditional" Charcoal, Combined Sorbents, and New Possibilities for Detoxification
	Tamar Umekashvili – Clinical Toxicologist of the First University Clinic, TSMU	Alcohol-Associated Acute Intoxication and Altered Consciousness: Challenges of Differential Diagnosis in Emergency Toxicology
	Salome Dalakishvili – Clinical Toxicologist of the First University Clinic, TSMU	Alcohol-Associated Agranulocytosis, Sepsis Risk, and Critical Anemia: Diagnostic Challenges of Inflammatory Markers in Chronic Alcohol Use
	Gela Beruashvili – Clinical Toxicologist of the First University Clinic, TSMU	Toxic Pancreatitis and Hepatotoxicity: Pathogenetic Links Between Organ Injuries
	Eka Kurdadze – Clinical Toxicologist, Head of Toxicology Direction of the First University Clinic; Assistant Professor of Anesthesiology, Reanimatology and Toxicology Department, TSMU	Toxic Cardiomyopathy and the Spectrum of Cardiotoxicity in Severe Poisoning: A Case Study
	Mariam Metreveli – Clinical Toxicologist of the First University Clinic, TSMU **Davit Topuria** – Clinical Toxicologist, Associate Professor of TSMU	Pesticide Poisoning: Diagnostic Difficulties and Fulminant Hepatic Failure
	Lela Asambadze – Clinical Toxicologist of the First University Clinic, TSMU	Calcium Channel Blocker Poisoning: Diagnostic and Therapeutic Challenges in Emergency Medicine
	Aleksandre Loladze – Anesthesiologist-Reanimatologist, Clinical Toxicologist of Rustavi Central Hospital; Vice Rector of Geomedi University, Assistant Professor	Acute Intoxication caused by opioid drugs: Complication and prevention
15:30-16:00	**Lunch**	
16:00-18:00	**Session №7** (Conference Hall №1) **Pediatric and Neonatal Critical Care** **Moderators:** Associate Professors - Nino Tskhvediani, Liana Dzidziguri; Tamar Goginashvili (Contd.)	
	Nikoloz Buadze – Pediatric Surgeon of Givi Zhvania Pediatric University Clinic, TSMU, Associate Professor	Laparoscopic-Endoscopic Treatment of Gastrointestinal Bleeding in Children
	Mariami Jinjikhadze –Anesthesiologist-Reanimatologist of Givi Zhvania Pediatric University Clinic, TSMU	Necrotizing Fasciitis Caused by Odontogenic Infection: Diagnosis and Management
	Ia Epitashvili – Anesthesiologist-Reanimatologist of Givi Zhvania Pediatric University Clinic, TSMU	Diagnosis and Management of Congenital HIV Infection in Infants
	Robert Makharashvili – Anesthesiologist-Reanimatologist of Givi Zhvania Pediatric University Clinic, TSMU	Early Recognition and Management of Neutropenic Sepsis After Hematopoietic Stem Cell Transplantation in Children
	Ketevan Gabriadze – Anesthesiologist-Reanimatologist of Givi Zhvania Pediatric University Clinic, TSMU	Hyperoxia in Pediatric Critical Care

	Gvantsa Kobaidze – Anesthesiologist-Reanimatologist of Givi Zhvania Pediatric University Clinic, TSMU	A Rare Complication of Epstein-Barr Virus: Clinical Case Discussion
	Tamar Ratiani – Pediatric Emergency Medicine Physician of Givi Zhvania Pediatric University Clinic, TSMU	Management of Sepsis Caused by Acute Sphenoiditis in Pediatric Patients
16:00-18:00	**Session №9 (**Conference Hall №2**)** **Traumatology and Emergency Medicine** **Moderators**: Kakha Bukia, Merab Kapanadze, Giorgi Loria	
	Vazha Bardavelidze – Orthopedic-Traumatologist of the Caucasus Medical Center	Pelvic Fractures
	Aleksi Tighilauri – Orthopedic-Traumatologist of the First University Clinic, TSMU	Management of Scaphoid Fractures
	Giorgi Lomia – Orthopedic Traumatologist at Mediclab Georgia	Management of acute trauma in ER
	Giorgi Phutkaradze – Orthopedic Trauma Surgeon, Batumi Medical Center (BMC), Batumi, Georgia	Management of Massive Acetabular Bone Defects in Revision Hip Arthroplasty Using Custom 3D-Printed Implants
	Paata Zakaraia – Orthopedic Traumatologist of the First University Clinic, TSMU	Management of High-Energy Long-Bone Injuries
	Levan Paniashvili – Orthopedic Traumatologist of the First University Clinic, TSMU	Finger Partial Amputations: Reconstruction of Defects
	Levan Gochiashvili – Orthopedic Traumatologist of the First University Clinic, TSMU	Surgical Management of Traumatic Acromioclavicular Joint Dislocations
	Daviti Shubitidze – Traumatologist of First University Clinic, TSMU	Femoral Neck Fracture Management in Elderly Patients

14 November 2026 – DAY III

Tbilisi State Medical University

Time	Speaker	Topic
09:00–10:00	**Registration**	
10:00–12:00	**Session №10** (Conference Hall №1) Neurocritical Care **Moderators:** Professors - Shota Ingorokva, Gocha Chutkerashvili, Mirza Khinikadze	
	Professor Mirza Khinikadze – Neurosurgeon of Caucasus Medical Center; **Koka Gogichashvili** – Neurosurgeon, New Vision University	Modern Challenges in the Treatment of Ischemic Stroke and the Georgian Reality
	Iakob Tsertsvadze – Head of Neurosurgery at West Georgia Medical Center	Surgical Outcomes and Recovery in Conventional Versus MIS-TLIF: A Single-Center Experience in a Middle-Income Healthcare System
	Marina Goginashvili – Chief Epidemiologist of Shida Kartli Region and the Military Hospital of the Defense Ministry of Georgia	Measles-Induced Subacute Sclerosing Panencephalitis (Dawson's Disease): Clinical Characteristics and Diagnostics
	Professor Vladimer Tsikarishvili – Head of Neurosurgery Direction, Caucasus Medical Center	Acute Vascular Pathologies
	Professor Shota Ingorokva – Head of Neurosurgery Direction, Ingorokva Clinic	Interdisciplinary Surgical Treatment of Skull Base Fractures
	Professor Gocha Chutkerashvili – Clinical Director of Innova Medical Center; **David Gugava** – Head of the Neurosurgical Department at St. Michael Hospital	Cervical Injuries
	Professor Gogi Maghalashvili – Head of Neurosurgery Direction, Institute of Clinical Oncology (ICO) - Medical Hub; **Giorgi Chiaberashvili** – Neurosurgeon of the Neurosurgical Department, Institute of Clinical Oncology (ICO) - Medical Hub	Surgical Treatment of Hemorrhagic Complications of Congenital Vascular Pathologies
	Tamar Gogichaishvili – Head of the Department of Anesthesiology and Intensive Care, Institute of Clinical Oncology (ICO) - Medical Hub	Anesthetic Management of Awake Craniotomy
	Nana Taktakishvili – Head of the Critical Care Medicine Center, Ghudushauri Clinic; Assistant Professor, Caucasus International University; **Lika Khorbaladze** – Neurosurgeon, Ghudushauri Clinic; Assistant Professor, Ken Walker International University; **Magda Tortladze** – Dean of the Faculty of Medicine, Caucasus International University; Obstetrician-Gynecologist, Chachava Clinic	Emergency Neonatal Neurosurgery

	Velodi Gakharia – Head of the Neurosurgery Department, First University Clinic, TSMU; **Aleksandre Kordzadze** – Neurosurgeon of Neurosurgery Department, First University Clinic, TSMU	Spinal Infections and Surgical Management
	Professor Maia Beridze – Head of the Department of Propedeutics and Topical Diagnosis of Neurological Diseases	Guillain-Barré Syndrome in Spinal Trauma
	Nana Saralidze – Head of the Neurology Department of First University Clinic, TSMU	Thrombolysis
10:00-12:00	**Session N11.** (Conference Hall №1) **Internal Medicine** **Moderators:** Professors - Tamar Kandashvili, Maka Buleishvili; Nino Khunashvili.	
	Professor Maria Theodorakopoulou – President-Elect, European Society of Intensive Care Medicine (ESICM), Vice-President, Hellenic Society of Intensive Care Medicine (HSICM); Visiting Professor of TSMU	Critical Care Nutrition 2026. What the evidence really supports
	Tamar Saralidze – Assistant Professor of Internal Diseases, Department No. 1, TSMU; **Medea Jgharkava** – Assistant Professor of Internal Diseases Department No. 1, TSMU;	Immunological Status of Patients with Acute Ischemic Diseases
	Tamar Svanidze – Assistant Professor of Internal Diseases Department No. 1, TSMU; **Irma Mamatsashvili** – Associate Professor of Internal Diseases Department No. 1, TSMU;	Assessment of Cardiovascular and Immunological Parameters in Pregnant Women with Arterial Hypertension
	Eka Arziani – Cardiologist of First University Clinic, TSMU; **Professor Tamar Kandashvili** – Head of the Internal Medicine Direction of First University Clinic, TSMU	Changes in Hemorheological Parameters and Their Impact on the Course of Heart Failure
	Maia Gotsadze – Assistant Professor of Internal Diseases Department No. 3, TSMU; **Marina Noniashvili** – Associate Professor of Internal Diseases Department No. 3, TSMU;	Contemporary Approaches to the Diagnosis and Management of Pulmonary Embolism
	Liza Goderdzishvili – Head of the Intensive Care Department at COI Medical Hub, Head of the Internal Medicine Residency Program at David Tvildiani Medical University	Cases of Diabetic Ketoacidosis Following Bariatric Surgery in Patients with Type 2 Diabetes
	Lali Patsia – Cardiologist of First University Clinic, TSMU	Abdominal STEMI – A Challenge in Critically Ill Patients
	Nina Filipova–Assistant Professor, BAU International University, Batumi	Rheumatological Diseases as a Cause of Emergency Hospitalizations: Analysis of BAU Hospital Experience

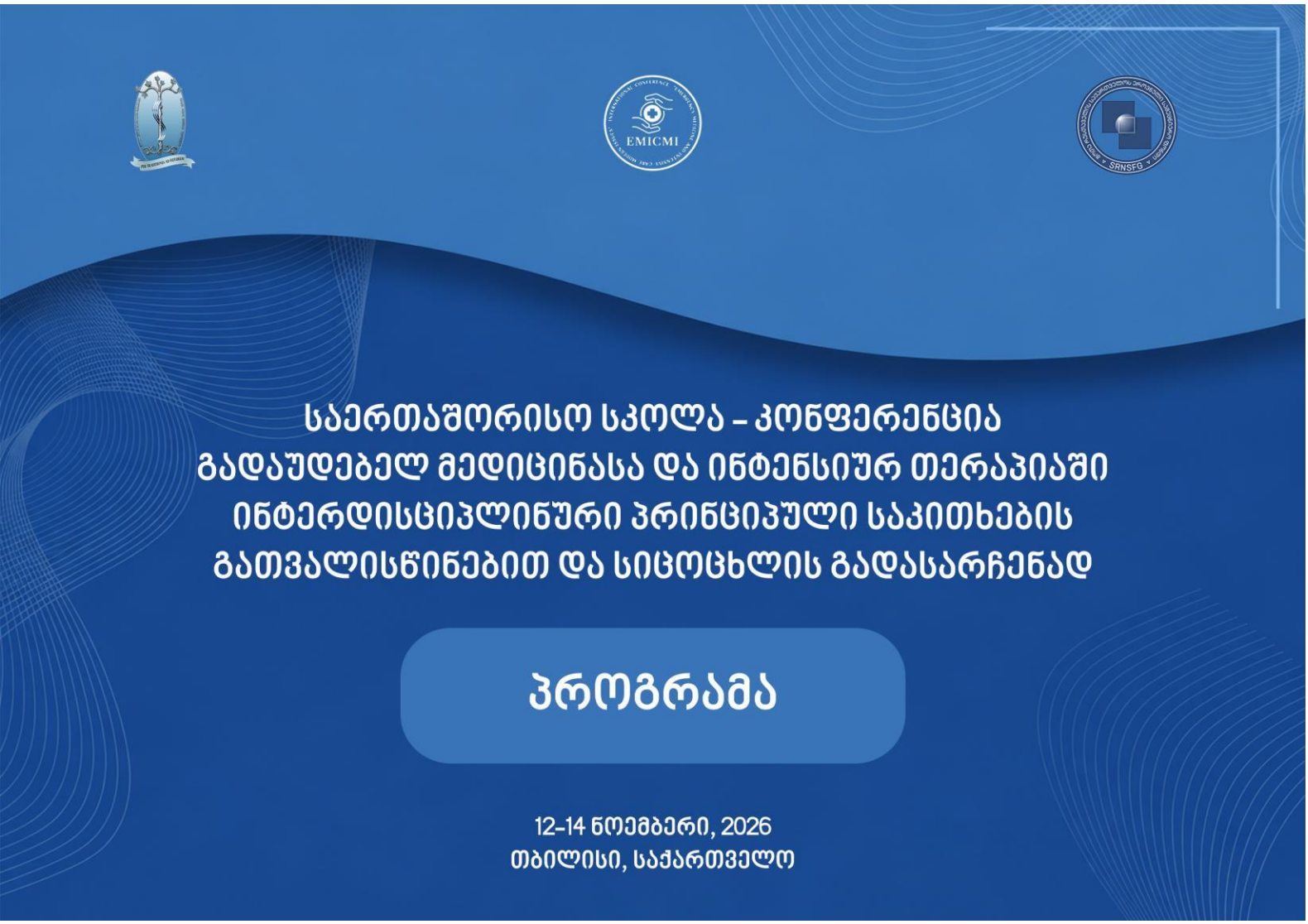
	Gia Barabadze – Head of Emergency Medicine Department, First University Clinic, TSMU	Prognostic Significance of the Association Between Clinical and Laboratory Parameters and Breast Cancer Markers in Atherosclerosis-Induced Chronic Kidney Disease (CKD)
	Ana Shamanadze – Nephrologist of Todua clinic, Associate professor at Georgian American University (GAU)	Importance of Quality-of-Life Assessment in the Care and Management of Hemodialysis Patients
	Natia Katamadze – Associate Professor of Caucasus University, Endocrinologist of Clinic Enmedic; **Professor Tamar Kandashvili** – Head of the Internal Medicine Direction of First University Clinic, TSMU	Gut Microbiota, Probiotics and Obesity: What Does Current Evidence Show?
12:00-12:30	**Coffee Break**	
12:30–13:30	**Session №12** (Conference Hall №1) **Artificial Intelligence, Evidence, and Digital Transformation in Emergency and Critical Care** **Moderators:** Professors - Sandro Gamkrelidze, Daniele Roberto Giacobbe	
	Daniele Roberto Giacobbe –Associate Professor, Department of Infectious Diseases, Health Sciences Direction, Genoa University, Genoa, Italy	Antibiotic Choices for Bloodstream Infections in the ICU: Navigating Therapy in the AI era
	Professor Maria Theodorakopoulou – President-Elect, European Society of Intensive Care Medicine (ESICM), Vice-President, Hellenic Society of Intensive Care Medicine (HSICM); Visiting Professor of TSMU	AI Augmented Nutrition in the ICU
	Professor Sandro Gamkrelidze –Head of Informatics Department, Tbilisi State University	The Structure of the Intelligence Revolution: Principles and Applications of Artificial Intelligence
	Thornike Zedelashvili – Specialist at the Information Security Department of the Digital Governance Agency of the Ministry of Justice.	Artificial Intelligence in Medicine: How New Technologies Are Transforming Healthcare
12:30-15:00	**Session №13 (**Conference Hall №2) **Young Researchers and Scientists Forum: Research, Innovation, and Future Leaders** **Moderators:** Associate Professors Shorena Khetsuriani and Natia Gamkrelidze; Medical Faculty Students - Vakhtang Mazanashvili and Ioseb Nozadze.	
	Data Kekutia – Resident, National Institute of Endocrinology	Clinical Proxy Markers of Adrenometabolic Dysregulation in ICU Patients with Sepsis and Septic Shock
	Elene Melikidze – PhD Student, TSMU	The Importance of Newborn Screening in Preventing Intensive Care Admissions for Severe Combined Immunodeficiency (SCID): Lessons from a High-Consanguinity Cohort
	Nino Kekenadze – Oncology Resident, Pineo Medical Ecosystem	Oncology and Emergency Medicine - When time determines outcome

	Mariam Giorgashvili – Pediatrics Resident, TSMU, Junior Doctor, Reiman Clinic	Acute Management of Prolonged Febrile Seizures in Children
	Tamar Burjanadze – Cardiology Resident, TSMU, Junior Doctor, Reiman Clinic	Beyond Troponin: Rethinking Acute Myocardial Infarction in the Emergency Department
	Mariam Tsanatskenishvili –Junior Doctor, First University Clinic of TSMU	From Odontogenic Infection to Mediastinitis: A Life-Threatening Surgical Emergency
	Nino Ormotsadze –Anesthesiology and Reanimatology Resident of First University Clinic, TSMU	Antibiotic Resistance Gene Profiles and Their Association with Disease Severity, Pathophysiological Parameters, and Clinical Outcomes
	Teona Aivazashvili – Anesthesiology and Reanimatology Resident of First University Clinic, TSMU	Management of Severe Acute Kidney Injury in Critically Ill Patients with Fluid Overload
	Saba Rurua – Student of Tbilisi State Medical University, Faculty of Medicine **Supervisor: Levan Ratiani**	Patient Care and Early Rehabilitation
13.30-15.50	**Marine Mikoyan –** Instructor of First Aid Training Center **Training Course** - Basic Life Support (BLS): Key Aspects of Cardiopulmonary Resuscitation **(**Conference Hall №4**)**	
15.00-16.00	**Lunch**	
16.00-17.00	**High-Level Expert Round Table (**Conference Hall №4**)** **Participants:** Maria Theodorakopoulou, Arzu Topeli (İskit), Despoina Koulenti, Christie Fritz, Thomas Musich, Iryna Romanava, Levan Ratiani, Nona Kakauridze, Shota Goliadze, Ramaz Kalandadze, Gia Barabadze, Amiran Gogitidze, Tamara Megrelishvili, Elene Pachkoria, Luiza Gabunia, Tamar Didbaridze, Vakhtang Shoshiashvili, Ketevan Machavariani, Tsotne Samadashvili, Tamar Kandashvili. **Future of Emergency and Critical Care: Building an Integrated, Sustainable, Evidence-Based System:** ● Prospects for the Development of Intensive Care in Georgia; ● Antimicrobial Resistance Problems and Strategies for Their Management; ● Multidisciplinary Collaboration in Emergency Medicine; ● Modern Approaches to the Management of Acute Conditions in the Postpartum Period.	
16.00-18.00	**Session №13** (Conference Hall №2) **Young Researchers and Scientists Forum: Research, Innovation, and Future Leaders** **Moderators:** Associate Professors Shorena Khetsuriani and Natia Gamkrelidze; Medical Faculty Students - Vakhtang Mazanashvili and Ioseb Nozadze (Contd.)	
	Elene Saribekovi –Resident of Infectious Diseases, TSMU **Supervisor: Levan Ratiani**	Lung Ultrasound Evaluation in Intensive Care: Diagnostic Principles, Clinical Application, and AI-Assisted Interpretation
	Keso Khachidze – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Keti Dalakishvili**	Acute Kidney Injury of Undetermined Etiology and Its Management with Renal Replacement Therapy: A Case Report
	Magda Makhatadze – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Natia Gamkrelidze**	The Role of Gluconeogenesis in Emergency Medicine: Metabolic Adaptation in Critical Conditions

	Mariam Varazashvili – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Velodi Gakharia**	Cushing's Triad as a Clinical Indicator of Impending Brain Herniation: Diagnostic Value and Emergency Management
	Mariam Kakhaberi – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisors: Koka Kacharava, Manana Gongadze**	Contemporary Approaches to Fluid Resuscitation in Septic Shock: The Use of Crystalloids and Colloids
	Ana Bokhua, Kristina Menabde – **S**tudents of the Faculty of Medicine, TSMU **Supervisor: Kakhaber Chelidze**	When eating triggers sweating: a case of post-traumatic frey's syndrome.
	Nino Gelashvili – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisors: Maia Svanidze, Neli Pkhaladze**	Adrenal Crisis, a Life-Threatening Endocrine Emergency – A Clinical Case
	Amiko Tutberidze, Vakhtangi Mazanashvili – Students of the Faculty of Medicine, TSMU, Members of the Scientific Research Club "Nexus" **Supervisors: Magda Rurua, Luiza Gabunia**	Critical Conditions of Toxic and Allergic Genesis in Intensive Care: Differential Diagnostics and Management of Cardiorespiratory Syndromes
	Ana Gabunia – Student at TSMU Faculty of Medicine, Member of the Scientific Research Club"Nexus" **Supervisor: Luiza Gabunia**	Acute Arsenic Poisoning in Emergency Medicine: Contemporary Approaches to Diagnosis and Management
	Gvantsa Khuroshvili – Student of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisors: Koka Kacharava, Shorena Khetsuriani**	Cefepime/Zidebactam Combination: New Perspectives in the Management of Sepsis and Septic Shock Caused by Multidrug-Resistant Gram-Negative Bacteria
	Temuri Kopadze – Student of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Ivlita Khvedelidze**	Management of Severe Polytrauma Following a Fall from an Eight-Story Building: A Case Report and Evaluation of Adherence to International Guidelines
	Ioseb Nozadze – Student of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Giorgi Sekania**	Epidemiological Trends and Clinical Management of Subdural Hematoma: Global and Local Perspectives
	Zurab Chochia – **S**tudent of the Faculty of Medicine, TSMU, Member of the Scientific Research Club "Nexus" **Supervisor: Kakhaber Bukiya**	Isolated Injury or Systemic Trauma? Damage Control Resuscitation in the Decompensated Elderly Patient

	Mariam Namgaladze, Saba Papiashvili - **S**tudents of the Faculty of Medicine, Tbilisi State University; Members of the Scientific Research Club "Nexus" **Supervisor: Velodi Gakharia**	Trigeminal Neuralgia: Emergency Management and Neurosurgical Considerations
18:00 – 18:30	**Conference Closing / Summary / Certificate Awarding** (Conference Hall N2)	





კონფერენციის ფინანსური მხარდამჭერია შოთა რუსთაველის საქართველოს ეროვნული სამეცნიერო ფონდი

სამუშაო ენები: ქართული და ინგლისური

12–13 ნოემბერი, 2026 | სასტუმრო „პარაგრაფ გოლფი და სპა თაბორი“, ნადიკვარი II

14 ნოემბერი, 2026 | თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი,

ვაჟა-ფშაველას გამზირი №33

ორგანიზატორები/თანაორგანიზატორები და მხარდამჭერები

- თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი (თსსუ)
- საქართველოს განათლების, მეცნიერებისა და ახალგაზრდობის სამინისტრო
- საქართველოს ოკუპირებული ტერიტორიებიდან დევნილთა, შრომის, ჯანმრთელობისა და სოციალური დაცვის სამინისტრო
- საქართველოს პარლამენტის ჯანმრთელობის დაცვისა და სოციალურ საკითხთა კომიტეტი
- გადაუდებელი მედიცინისა და ინტენსიური თერაპიის ასოციაცია საქართველოში
- ბიოსამედიცინო კვლევების განვითარების ასოციაცია
- საგანგებო სიტუაციების კოორდინაციისა და გადაუდებელი დახმარების ცენტრი
- ბაუ საერთაშორისო უნივერსიტეტი
- კავკასიის საერთაშორისო უნივერსიტეტი
- ბათუმის სამედიცინო ცენტრი (BMC)
- ბათუმის სამედიცინო უნივერსიტეტი „ავიცენა“
- ფარმაცევტული კომპანია - “Yuria-Pharma”
- ფარმაცევტული კომპანია - “New Pharma”
- ფინურ-ქართული კომპანია - „FaFina”
- შვეიცარული კომპანია - „MEDIFOOD”
- საქართველოს გერონტოლოგთა საზოგადოება
- თარხნიშვილის სახელობის სტუდენტთა სამეცნიერო საზოგადოება (თსსუ)
- სტუდენტური სამეცნიერო-კვლევითი კლუბი - „ნექსუსი” (თსსუ)
- საქართველოს ჯანმრთელობის ახალგაზრდული ასოციაცია - “ჯიჰა” (თსსუ)

კონფერენციის საპატიო პრეზიდენტი - მარია თეოდორაკოპულუ, BSc, MD, MSc, PhD, ქირურგი, ინტენსიური თერაპიის განყოფილების ხელმძღვანელი, გადაუდებელი და კრიტიკული მედიცინის დეპარტამენტის დირექტორი (ატიკის გენერალური საავადმყოფო „KAT“, ათენი, საბერძნეთი); ათენის ეროვნული და კაპოდისტრიული უნივერსიტეტის (NKUA) სამედიცინო სკოლასთან აფილირებული სპეციალისტი; ათენის ეროვნული და კაპოდისტრიული უნივერსიტეტის I საუნივერსიტეტო ინტენსიური თერაპიის განყოფილების, „ევანგელიზმოსის“ საავადმყოფოს კვლევითი პროგრამების ფაკულტეტის წევრი; **ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების (ESICM) არჩეული პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების (HSICM) ვიცე-პრეზიდენტი; თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის ვიზიტიორი პროფესორი.**

საორგანიზაციო კომიტეტი

სახელი	თანამდებობა / აფილაცია
ირაკლი ნატროშვილი	თსსუ-ის რექტორი, პროფესორი
ლევან რატიანი	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის გენერალური დირექტორი, პროფესორი
ლუიზა გაბუნია	თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი
ზაზა ლომინაძე	საქართველოს პარლამენტის ჯანმრთელობის დაცვისა და სოციალურ საკითხთა კომიტეტის თავმჯდომარე

ზურაბ ვადაჭკორია	თსსუ-ის ვიცე-რექტორი კლინიკური მიმართულებით, პროფესორი
ნიკოლოზ ჩიქოვანი	საგანგებო სიტუაციების კოორდინაციისა და გადაუდებელი დახმარების ცენტრის დირექტორი
ამირან გოგიტიძე	საგანგებო სიტუაციების კოორდინაციისა და გადაუდებელი დახმარების ცენტრის სამედიცინო უზრუნველყოფის დეპარტამენტის უფროსი
ზაზა ბოხუა	თსსუ-ის დიპლომისშემდგომი სამედიცინო განათლებისა და უწყვეტი პროფესიული განვითარების ინსტიტუტის დირექტორი, პროფესორი
ნინო ჭუმბურიძე	თსსუ-ის საპატიო დოქტორი, თავდაცვის სამინისტროს სამხედრო ჰოსპიტლის თერაპიული სამსახურის უფროსი; კლინიკური ონკოლოგიის ინსტიტუტის ამბულატორიული სამსახურის ხელმძღვანელი
ირმა ჭოხონელიძე	თსსუ-ის შინაგან სნეულებათა N2 დეპარტამენტის ხელმძღვანელი, პროფესორი
ირინა იმერლიშვილი	ბაუ საერთაშორისო უნივერსიტეტის რექტორი
ილია ნაკაშიძე	ბათუმის შოთა რუსთაველის სახელმწიფო უნივერსიტეტის კრიტიკული მედიცინის დეპარტამენტის ხელმძღვანელი, პროფესორი
ნინო ცხვედიანი	თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის აღმასრულებელი დირექტორი, ასოცირებული პროფესორი
ქეთევან მაჭავარიანი	თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასოცირებული პროფესორი
ჯენი ჯანხოთელი	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი-რეანიმატოლოგი
ავთანდილ ჩიტიძე	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის საზოგადოებასთან ურთიერთობის სამსახურის ხელმძღვანელი
ეთერ ქათამაძე	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის იურისტი
ირინა კაპეტივაძე	თსსუ-ის რექტორის აპარატის უფროსი, ასოცირებული პროფესორი
ნონა კაკაურიძე	თსსუ-ის შინაგან სნეულებათა დეპარტამენტის ასოცირებული პროფესორი, ექიმი კარდიოლოგი - რევმატოლოგი.
ეკა ხუჭუა	თსსუ-ის პირველი საუნვერსიტეტო კლინიკის ექიმი რეანიმატოლოგ-ანესთეზიოლოგი
გია ბარაბაძე	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის გადაუდებელი მედიცინის დეპარტამენტის ხელმძღვანელი
თამარ დიდბარიძე	თსსუ-ის მიკრობიოლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი
ელენე პაჭკორია	თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ინფექციურ დაავადებათა განყოფილების ხელმძღვანელი, ასოცირებული პროფესორი
დავით ქოჩიაშვილი	თსსუ-ის უროლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი
ლია გოლიაძე	ვ. ბოჭორიშვილის სახელობის კლინიკის ინფექციურ სნეულებათა დეპარტამენტის ხელმძღვანელი
ირაკლი დარბუაშვილი	თსსუ-ის ეკონომიკური დეპარტამენტის საგეგმო-საფინანსო განყოფილების უფროსი
გიორგი ჭიჭინაძე	თსსუ-ის ფიზიოლოგიის დეპარტამენტის ასოცირებული პროფესორი
თამარ ხახუტაშვილი	თსსუ-ის ბიბლიოთეკის დირექტორი

სამეცნიერო კომიტეტი

სახელი	თანამდებობა / აფილაცია
ვახტანგ შოშიაშვილი	თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასისტენტ-პროფესორი; პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი
სამსონ ქაჯაია	გ. ჩაფიძის სახელობის გადაუდებელი კარდიოლოგიის ცენტრის ანესთეზიოლოგია-რეანიმატოლოგიის დეპარტამენტის ხელმძღვანელი
შორენა ხეცურიანი	თსსუ-ის მიკრობიოლოგიის დეპარტამენტის ასოცირებული პროფესორი
ნათია გამყრელიძე	თსსუ-ის პათოფიზიოლოგიის დეპარტამენტის ასოცირებული პროფესორი
ნინო ინწკირველი	თსსუ-ის ფიზიკის, ბიოფიზიკის, ბიომექანიკისა და საინფორმაციო ტექნოლოგიების დეპარტამენტის ასოცირებული პროფესორი
ლია ძიძიგური	თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასოცირებული პროფესორი
ნანა გორგასლიძე	თსსუ-ის სოციალური და კლინიკური ფარმაციის დეპარტამენტის ხელმძღვანელი, პროფესორი
დიანა ძიძიგური	თბილისის სახელმწიფო უნივერსიტეტის ბიოლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი
თამარა მეგრელიშვილი	თსსუ-ის ინფექციურ სნეულებათა დეპარტამენტის ასისტენტ-პროფესორი
ნინო გვაჯაია	Wellstar cobb-ის სამედიცინო ცენტრის შინაგანი მედიცინის რეზიდენტი (აშშ)
ელენე სარიბეკოვი	თსსუ-ის ინფექციური სნეულებების რეზიდენტი

პროგრამული უზრუნველყოფა: **გიორგი ვარაზი** - სამეცნიერო უნარ-ჩვევების ცენტრის სპეციალისტი (თსსუ).

პროგრამა

12 ნოემბერი**, 2026** – პირველი დღე

სასტუმრო „პარაგრაფ თაბორი“**,** თბილისი**,** საქართველო

კონფერენციის გახსნა, გლობალური პერსპექტივები და კრიტიკული მედიცინის ინოვაციები

დრო	მომხსენებელი	თემა
9:00 – 10:00	რეგისტრაცია	
10:00 –10:45	**ირაკლი ნატროშვილი** - თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის რექტორი, პროფესორი; **გივი მიქანაძე** - საქართველოს განათლების, მეცნიერებისა და ახალგაზრდობის მინისტრი; **მიხეილ სარჯველაძე** - საქართველოს ოკუპირებული ტერიტორიებიდან დევნილთა, შრომის, ჯანმრთელობისა და სოციალური დაცვის მინისტრი; **მარიამ ლაშხი** - საქართველოს პარლამენტის განათლების, მეცნიერების და ახალგაზრდულ საქმეთა კომიტეტის თავმჯდომარე; **ზაზა ლომინაძე** - საქართველოს პარლამენტის ჯანმრთელობის დაცვისა და სოციალურ საკითხთა კომიტეტის თავმჯდომარე; **თეიმურაზ დოჭვირი** - შოთა რუსთაველის საქართველოს ეროვნული სამეცნიერო ფონდის გენერალური დირექტორი; **ლევან რატიანი** - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის გენერალური დირექტორი, პროფესორი; **პროფესორი მარია თეოდორაკოპულუ** - ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების (ESICM) არჩეული პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების (HSICM) ვიცე-პრეზიდენტი; თსსუ-ის	კონფერენციის ოფიციალური გახსნა და მისალმებები მოხსენება: რატომ ჩერდება გული? ფიზიოლოგიასა და მარადისობას შორის: კითხვა კლინიკურ პროტოკოლებს მიღმა მისალმება

	ვიზიტიორი პროფესორი. **პროფესორი ალექსანდრე ლეჟავა** - HBRO-ს ასოცირებული დირექტორი, სინგაპურის გენომის ინსტიტუტი, მეცნიერების, ტექნოლოგიისა და კვლევის სააგენტო; სინგაპურის ტრანსლაციურ კიბოს კონსორციუმის პლატფორმის ხელმძღვანელი; თსსუ-ის საპატიო დოქტორი **ირინა იმერლიშვილი** - ბაუ საერთაშორისო უნივერსიტეტის რექტორი **მოდერატორი: ლუიზა გაბუნია** - თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი	მისალმება მისალმება
10:45-11:00	**შესვენება**	

11:00 –13:00	**გახსნითი პლენარული სესია – გადაუდებელი და კრიტიკული მედიცინის მომავალი: მტკიცებულებებზე დაფუძნებული მედიცინიდან სიცოცხლის გადარჩენამდე (საკონფერენციო დარბაზი N1)** **საკვანძო მოხსენებები და თანამედროვე მიღწევების მიმოხილვა**	
	პროფესორი მარია თეოდორაკოპულუ - ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების (ESICM) არჩეული პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების (HSICM) ვიცე-პრეზიდენტი; თსსუ-ის ვიზიტიორი პროფესორი	ინტენსიური თერაპიის მომავალი ევროპაში — გამოწვევები და შესაძლებლობები
	პროფესორი არზუ თოფელი (ისქითი) - ჰაჯეთეპეს უნივერსიტეტის მედიცინის ფაკულტეტის დეკანი, ანკარა, თურქეთი	კრიტიკული დაავადებისა და ინტენსიური თერაპიის განყოფილებაში მკურნალობის გრძელვადიანი შედეგები: პოსტინტენსიური თერაპიის სინდრომი
	პროფესორი დესპოინა კოულენტი - ლონდონის სამეფო კოლეჯის ჰოსპიტალი, ლონდონი, გაერთიანებული სამეფო; ევროპის კლინიკური მიკრობიოლოგიისა და ინფე ქციური დაავადებების საზოგადოების (ESCMID) კრიტიკულად მძიმე პაციენტებში ინფექციების შემ სწავლელი ჯგუფის თავმჯდომარე	ანტიბიოტიკების დოზირების ოპტიმიზაცია კრიტიკულად მძიმე პაციენტებში
	ქრისტი ფრიცი - ჰარვარდის სამედიცინო სკოლის გადაუდებელი მედიცინის დეპარტამენტის ასისტენტ-პროფესორი; ბეთ ისრაელ დიკონესის სამედიცინო ცენტრის (BIDMC) სასწრაფო სამედიცინო დახმარების სამსახურის სამედიცინო დირექტორი, აშშ	სეფსისის პრეჰოსპიტალური მართვა
	პროფესორი ალექსანდრე ლეჟავა - HBRO-ს ასოცირებული დირექტორი, სინგაპურის გენომის ინსტიტუტი, მეცნიერების, ტექნოლოგიისა და კვლევის სააგენტო; სინგაპურის ტრანსლაციური კიბოს კონსორციუმის პლატფორმის ხელმძღვანელი; თსსუ-ის საპატიო დოქტორი	მოლეკულური დიაგნოსტიკა კლინიკურ გარემოში: მიმდინარე გამოწვევები და მიღწევები
13:00-14:00	**ყავით შესვენება / წიგნის პრეზენტაცია**	
14:00 –16:00	**სესია №1 (საკონფერენციო დარბაზი №1)** **კრიტიკული მედიცინა 2026: გამოწვევები, ინოვაციები და პერსონალიზებული მიდგომები** **მოდერატორები:** პროფესორები - არზუ თოფელი (ისქითი), ირმა ჭოხონელიძე, ლევან რატიანი	

	პროფესორი არზუ თოფელი (ისქითი) - ჰაჯეთეპეს უნივერსიტეტის მედიცინის ფაკულტეტის დეკანი, ანკარა, თურქეთი.	სეფსისის პერსონალიზებული მართვა
	პროფესორი ირმა ჭოხონელიძე - თსსუ-ის შინაგან სნეულებათა N2 დეპარტამენტის ხელმძღვანელი	თირკმლის მწვავე დაზიანების მართვა ინტენსიური თერაპიის განყოფილებაში.
	პროფესორი მაია ბერიძე - ნერვულ სნეულებათა პროპედევტიკის და ტოპიკური დიაგნოსტიკის დეპარტამენტის ხელმძღვანელი	თრომბოლიზური მკურნალობისა და თრომბექტომიის გამოწვევები და მიღწევები თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ბაზაზე
	პროფესორი თამარ დიდბარიძე - თსსუ-ის მიკრობიოლოგიის დეპარტამენტის ხელმძღვანელი	ინტენსიური მოვლის განყოფილებაში მოლეკულური ეპიდემიოლოგიის როლი და მნიშვნელობა
	პროფესორი დესპოინა კოულენტი - ლონდონის სამეფო კოლეჯის ჰოსპიტალი, ლონდონი, გაერთიანებული სამეფო; ევროპის კლინიკური მიკრობიოლოგიისა და ინფე ქციური დაავადებების საზოგადოების (ESCMID) კრიტიკულად მძიმე პაციენტებში ინფექციების შემ სწავლელი ჯგუფის თავმჯდომარე	სწრაფი დიაგნოსტიკა და ანტიმიკრობული მართვა (AMS): ადრეული მკურნალობა, სწრაფი დახვეწა და არასაჭირო ანტიბიოტიკების თავიდან აცილება
	ქრისტი ფრიცი - ჰარვარდის სამედიცინო სკოლის გადაუდებელი მედიცინის დეპარტამენტის ასისტენტ-პროფესორი; ბეთ ისრაელ დიკონესის სამედიცინო ცენტრის (BIDMC) სასწრაფო სამედიცინო დახმარების სამსახურის სამედიცინო დირექტორი, აშშ	ტრავმული სისხლდენა და მასიური ტრანსფუზიის პროტოკოლები
	მარკ სატონ-სმიტი - თსსუ-ის ვიზიტიორი პროფესორი; მოჰამედ ბინ რაშიდის მედიცინისა და ჯანმრთელობის მეცნიერებათა უნივერსიტეტის მოწვეული კლინიკური ასოცირებული პროფესორი, დუბაი, არაბთა გაერთიანებული საამიროები.	გლუკოზის კონტროლის მიღმა: GLP-1 რეცეპტორის აგონისტებისა და გლუკოზის უწყვეტი მონიტორინგის გავლენა აქტიურ სამედიცინო დახმარებაზე
	პროფესორი ნიკა ქურიძე - აკადემიკოს გ. ჩაფიძის სახელობის გადაუდებელი კარდიოლოგიის ცენტრის კარდიოქირურგიული დეპარტამენტის ქირურგიის სტაციონარის ხელმძღვანელი	უეცარი კარდიული სიკვდილი და იმპლანტირებადი კარდიომოწყობილობის როლი მის პრევენციაში
	პროფესორი ლუიზა გაბუნია - თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის ხელმძღვანელი; **გვანცა ჯანიგაშვილი** - თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის მოწვეული მასწავლებელი	ანტიბიოტიკებთან ასოცირებული რისკები კრიტიკულ პაციენტებში

	პროფესორი ირინა რომანავა - კლინიკური ფარმაკოლოგიის დეპარტამენტის ხელმძღვანელი, ბელორუსიის სახელმწიფო სამედიცინო უნივერსიტეტი, მინსკი, ბელორუსია	ანტიკოაგულანტების რაციონალური გამოყენება გადაუდებელ მედიცინაში
	ლია გოლიაძე - ინფექციურ სნეულებათა დეპარტამენტის ხელმძღვანელი, ვახტანგ ბოჭორიშვილის კლინიკა	სეფსისი მძიმე თანმხლები დაავადებების მქონე პაციენტებში
	შოთა გოლიაძე, რამაზ კალანდაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი - რეანიმატოლოგები	სეფსისი და მწვავე რესპირატორული დისტრეს სინდრომი.
	ხატია მიქაბერიძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ლაბორატორიული დეპარტამენტის უფროსი ექიმი, თსსუ-ის მოწვეული პედაგოგი, თსსუ-ის დოქტორანტი; **პროფესორი ნინო გოგოხია** - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ლაბორატორიული მედიცინის დეპარტამენტის ხელმძღვანელი	ენდოთელიუმიდან ალვეოლამდე: COVID - 19-ით გამოწვეული რესპირატორული კრიზისის ბიომარკერული რუკა
14:00 –15:30	**სესია №2 (საკონფერენციო დარბაზი №2)** **პრეჰოსპიტალური მართვის თანამედროვე ასპექტები** მოდერატორები: ლუიზა გაბუნია, ამირან გოგიტიძე, გია ბარაბაძე	
	გია ბარაბაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის გადაუდებელი მედიცინის დეპარტამენტის ხელმძღვანელი	სეფსისის ადრეული დიაგნოსტირება და მართვა გადაუდებელი მედიცინის დეპარტამენტში
	ამირან გოგიტიძე - საგანგებო სიტუაციების კოორდინაციისა და გადაუდებელი დახმარების ცენტრის სამედიცინო უზრუნველყოფის დეპარტამენტის უფროსი	ტრავმის კინემატიკა, მწვავე ტრავმები, მასობრივი დაზარალებულების ტრიაჟი და მართვა
	თეიმურაზ გოლეთიანი - თსსუ-ის რადიოლოგიის დეპარტამენტის ასოცირებული პროფესორი	ინსულტის თანამედროვე რადიოლოგიური დიაგნოსტიკა გადაუდებელ მედიცინაში
	ამირან გოგიტიძე - საგანგებო სიტუაციების კოორდინაციისა და გადაუდებელი დახმარების ცენტრის სამედიცინო უზრუნველყოფის დეპარტამენტის უფროსი	საერთაშორისო გადაუდებელი დახმარების გუნდის მიერ გადაუდებელი დახმარების სისტემური მართვა და ბუნებრივ/ტექნოგენურ კატასტროფებზე რეაგირება
	თამარა მეგრელიშვილი - თსსუ-ის ინფექციური სნეულებების დეპარტამენტის ასისტენტ-პროფესორი	ცხელებით მიმდინარე პათოლოგიები გადაუდებელ მედიცინაში

	პროფესორი გულნარა აბაშიძე-გაბაიძე - ბაუ საერთაშორისო უნივერსიტეტი, ბათუმი	ემპირიული ანტიბიოტიკოთერაპიის მიღმა: დიაგნოსტიკური ზედამხედველობა, სწრაფი დიაგნოსტიკა და მიზნობრივი ანტიმიკრობული თერაპია პირველადი ჯანდაცვის დონეზე
	გიორგი ჩიჩუა - გადაუდებელი სამედიცინო დახმარების ცენტრის სასწავლო დეპარტამენტის ხელმძღვანელი	გულის გაჩერების მართვის ალგორითმი ამერიკის გულის ასოციაციის 2025 წლის განახლებული გაიდლაინის მიხედვით
	ლევან ქარაზანაშვილი - კარდიოქირურგი	მწვავე მიოკარდიუმის ინფარქტი: როდის გვჭირდება კარდიოქირურგი?!
	შავლეგ კუტალაძე - ბაუ საერთაშორისო უნივერსიტეტი, ბათუმი, ასისტენტ-პროფესორი	პირველ მცდელობამდე: ჩექლისტის მნიშვნელობა კრიტიკულად მძიმე პაციენტის ინტუბაციისას
	ნათია ხარატი - ბაუ საერთაშორისო უნივერსიტეტი, ასისტენტ-პროფესორი ბათუმი	არაკონვულსიური ეპილეფსიური სტატუსი (NCSE) ინტენსიურ თერაპიაში: საერთაშორისო გაიდლაინები და ადგილობრივი გამოწვევები
15:30-16:00	**ლანჩი**	
16:00-18:00	**სესია №3 (საკონფერენციო დარბაზი №1)** **სეფსისი და სეპტიური შოკი** მოდერატორები: პროფესორები - დესპოინა კოულენტი, თამარ დიდბარიძე; ასოცირებული პროფესორი ელენე პაჭკორია	
	პროფესორი მარია თეოდორაკოპულუ - ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების (ESICM) არჩეული პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების (HSICM) ვიცე-პრეზიდენტი; თსსუ-ის ვიზიტიორი პროფესორი	ადგილზე სწრაფი დიაგნოსტიკური ტესტირება (POC Testing): არსებული ხარვეზები და საჭიროებები
	ჯენი ჯანხოთელი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი-რეანიმატოლოგი	ახალი ბიომარკერების როლი სეპტიური შოკის პათოგენეზში
	მაგდა რურუა - თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასისტენტ-პროფესორი	იმუნოკომპრომისულ პაციენტებში სეფსისის დიაგნოსტიკის და მიმდინარეობის თავისებურები
	ივლიტა ხვედელიძე - პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	გაფართოებულ რეზისტენტული *Klebsiella pneumoniae* და *Acinetobacter baumanii*-ით გამოწვეული ინფექციების შედარებითი ანალიზი რეანიმაციულ განყოფილებაში - ლაბორატორიული მაჩვენებლების კორელაცია დაავადების მიმდინარეობის სიმძიმესა და კლინიკურ გამოსავალთან
	თინათინ გაფრინდაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	საკეისრო კვეთის შემდგომი სეფსისის მართვა

	პროფესორი ლუიზა გაბუნია - თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის ხელმძღვანელი, პროფესორი **შორენა ხეცურიანი** - თსსუ-ის მიკრობიოლოგიის დეპარტამენტის ასოცირებული პროფესორი	რაციონალური ემპირიული ანტიბიოტიკოთერაპიის საკვანძო საკითხები და გამოწვევები სეფსისის პირობებში
	ნინო თოთაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ნუტრიციოლოგი	სეპტიურ პაციენტებში კვებითი თავისებურებები
	ანა არჩვაძე - თსსუ-ის კლინიკური ფარმაკოლოგიის დეპარტამენტის ასოცირებული პროფესორი	წამლის ეფექტებზე მოქმედი პათოფიზიოლოგიური ფაქტორები კრიტიკული მდგომარეობების დროს.
	პროფესორი თამარ სანიკიძე - თსსუ-ის ფიზიკის, ბიოფიზიკის, ბიომექანიკის და საინფორმაციო ტექნოლოგიების დეპარტამენტის ხელმძღვანელი	ინფექციიდან ორგანოთა უკმარისობამდე: მიტოქონდრიული დისფუნქცია სეფსისის პათოგენეზში
	გულნარა ქილიფთარი - თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასოცირებული პროფესორი	სეფსისით ინდუცირებული მდგომარეობები
	მედეა გობეჯიშვილი - თსსუ-ის ოფთალმოლოგიის დეპარტამენტის ასოცირებული პროფესორი, **ანანო შარაშენიძე** - თსსუ-ის ოფთალმოლოგიის დეპარტამენტის რეზიდენტი	თვალის დიროფილარიოზი: კლინიკური შემთხვევები
	გიორგი-ჯემალ გოგიტიძე - ასოცირებული პროფესორი, სამეცნიერო-კვლევითი მიმართულების ხელმძღვანელი, ბაუ ინტერნეიშენალ უნივერსიტეტი ბათუმი, საქართველო	სამეანო სეფსისი და სეპტიკური შოკი ინტენსიური თერაპიის განყოფილებაში: საწყისი რეანიმაციული ღონისძიებები, ჰემოდინამიკური სტაბილიზაცია და მულტიდისციპლინური მართვა
16:00-18:00	**სესია №4 (საკონფერენციო დარბაზი N2)** **ანესთეზიოლოგია და პერიოპერაციული მენეჯმენტი** მოდერატორები: პროფესორები - მარია თეოდორაკოპოულოუ, ქრისტი ფრიცი; ეკა ხუჭუა	
	ვახტანგ შოშიაშვილი - თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასისტენტ-პროფესორი; პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	წელის ეპიდურალური სტეროიდული ინექციის მეთოდები წელისა და რადიკულური ტკივილის დროს: ტრანსფორამინალური, ინტერლამინარული და კაუდალური ტექნიკების შედარებითი მიმოხილვა
	ირაკლი მოდებაძე - პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	ენდოთელური გლიკოკალიქსის დაცვა თანამედროვე ანესთეზიოლოგიაში: ფუნდამენტური მეცნიერებიდან კლინიკურ პრაქტიკამდე

	ჯანო ონიანი - პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	დელირიუმი ICU-ში: გავრცელება, რისკ-ფაქტორები და გამოსავალი
	ქეთევან მაჭავარიანი - თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასოცირებული პროფესორი **თამარ შოთაძე** - პეტრე შოთაძის სახელობის სამედიცინო აკადემიის ვიცე-რექტორი, კლინიკური უნარების დეპარტამენტის ხელმძღვანელი	კორტიკოსტეროიდების გამოყენება სეფსისით გამოწვეული მწვავე რესპირატორული დისტრეს-სინდრომის დროს
	ლია ძიძიგური - თსსუ-ის ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასოცირებული პროფესორი	შეზღუდული შესაძლებლობების მქონე ბავშვებში ანესთეზიოლოგიური უზღუნველყოფის თავისებურებები სტომატოლოგიურ ჩარევისას
	ცოტნე სამადაშვილი - კავკასიის მედიცინის ცენტრის ანესთეზიისა და საოპერაციო დეპარტამენტის ხელმძღვანელი, კავკასიის საერთაშორისო უნივესიტეტის ასოცირებული პროფესორი	ტრავმის შედეგად გამოწვეული მწვავე რესპირატორული დისტრესის ანესთეზიოლოგიური მართვის თანამედროვე საკითხები
	ია აღდგომელაშვილი - თსსუ-ის და ინგოროყვას მაღალი სამედიცინო ტექნოლოგიების საუნივერსიტეტო კლინიკის ანესთეზიოლოგიური სამსახურის და საოპერაციო ბლოკის ხელმძღვანელი, ასისტენტ-პროფესორი	სითხე თუ ვაზოპრესორი?! ჰემოდინამიკური გადაწყვეტილებები საოპერაციოში
	სტეფანე ჩილინგარაშვილი - თელავის რაიონული საავადმყოფოს ანესთეზიოლოგ-რეანიმატოლოგი	პაციენტის საწოლთან ჩატარებული ულტრაბგერითი კვლევის როლი თანამედროვე ზოგად ანესთეზიაში
	გვანცა ქაჩლიშვილი - კლინიკა „MediClubGeorgia "-ის ანესთეზიოლოგ-რეანიმატოლოგი	ანემიურ მშობიარეებში ანემიის მართვის თანამედროვე სტრატეგიები უკეთესი ანესთეზიოლოგიური გამოსავლისთვის
	ეკა ხუჭუა - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგ-რეანიმატოლოგი	ავთვისებიანი ჰიპერთერმია

13 ნოემბერი, 2026 - მეორე დღე

სასტუმრო „პარაგრაფ თაბორი", თბილისი, საქართველო

დრო	მომხსენებელი	თემა
09:00-10:00	**რეგისტრაცია**	
10:00-12:00	სესია **№5** (საკონფერენციო დარბაზი №1) **ანტიმიკრობული რეზისტენტობა და ანტიმიკრობული ზედამხედველობა** მოდერატორები**:** პროფესორი დესპოინა კოულენტი, ლია გოლიაძე, ასისტენტ პროფესორი თამარა მეგრელიშვილი	
	თომას მუზიხი - უოლტერ რიდის სახელობის არმიის კვლევითი ინსტიტუტის (WRAIR) სამეცნიერო დირექტორი	ევროპაში ანტიმიკრობული რეზისტენტობის საფრთხე

	დავით ჩახუნაშვილი - დაავადებათა კონტროლის ცენტრის ეპიდემიოლოგი	თანამედროვე ლაბორატორიული სისტემის გაძლიერებით რეანიმაციულ პაციენტებში სისხლის ნაკადის ინფექციების მართვა
	პროფესორი თამარ დიდბარიძე - თსსუ-ის მიკრობიოლოგიის დეპარტამენტის ხელმძღვანელი	სოკოვანი ინფექციების დიაგნოსტიკა და მართვა რეანიმაციულ პაციენტებში
	ელენე პაჭკორია - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ინფექციური მიმართულების ხელმძღვანელი, ასოცირებული პროფესორი	ცხელება ინტენსიური თერაპიის განყოფილებაში: ახალი ბიომარკერების როლი ინფექციისა და სეფსისის ადრეულ დიაგნოსტიკაში
	პროფესორი დიანა ძიძიგური - თბილისის სახელმწიფო უნივერსიტეტის ბიოლოგიის დეპარტამენტის ხელმძღვანელი	თანატოტრანსკრიპტომი: გენების ექსპრესია სიკვდილის შემდგომ და მისი მნიშვნელობა მედიცინაში
	ნათია ფხალაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის მეან-გინეკოლოგი; თსსუ-ის მეანობა-გინეკოლოგიის დეპარტამენტის ასოცირებული პროფესორი	რაციონალური ანტიბიოტიკოთერაპია საკეისრო კვეთის დროს
	მაია უგულავა, ჯული რაჭველიშვილი - კავკასიის საერთაშორისო უნივერსიტეტის მოწვეული ლექტორები. თბილისი, საქართველო;	კრიტიკული მდგომარეობების ეპიდემიოლოგია და ინტენსიური თერაპიის შედეგები: საზოგადოებრივი ჯანდაცვის პერსპექტივა
10:00-12:00	**სესია №6 (საკონფერენციო დარბაზი №2)** **გერიატრიული კრიტიკული მედიცინა** **საქართველოს გერონტოლოგთა საზოგადოება** **მოდერატორები:** პროფესორი - თეიმურაზ ლეჟავა, ასოცირებული პროფესორი ნონა კაკაურიძე, თსსუ-ის საპატიო დოქტორი ნინო ჭუმბურიძე	
	პროფესორი თეიმურაზ ლეჟავა - თბილისის სახელმწიფო უნივერსიტეტის გენეტიკის დეპარტამენტის ხელმძღვანელი; საქართველოს გერონტოლოგთა საზოგადოების პრეზიდენტი	ჰეტეროქრომატინისა და ბირთვაკის მაორგანიზებელი რაიონის (NOR) ცვლილებები სარძევე ჯირკვლის სადინარულ კიბოში.
	ნონა კაკაურიძე - თსსუ-ის შინაგან სნეულებათა დეპარტამენტის ასოცირებული პროფესორი, ექიმი კარდიოლოგი - რევმატოლოგი.	კარდიო-ვასკულური გართულებების მარკერების გამოყენება ხანგრძლივი კოვიდის (long COVID) ურგენტულ პრაქტიკაში
	ნინო დიდბარიძე - თსსუ-ის იმუნოლოგიის დეპარტამენტის ასისტენტ-პროფესორი	გერიატრიული იმუნოპარალიზი: იმუნური სისტემის ამოწურვიდან სეფსისის მართვამდე.

	პროფესორი მაკა ბულეიშვილი - ბაუ საერთაშორისო უნივერსიტეტი, ბათუმი	გერიატრიული მედიცინა და გადაუდებელი დახმარება: ხანდაზმული პაციენტების შეფასების, მართვისა და უსაფრთხოების თანამედროვე კონცეფცია
	გიორგი ნიკოლაიშვილი - სს. ვიანი-თბილისის რეფერალური ჰოსპიტალის კარდიოლოგი, ავიცენა-ბათუმის სამედიცინო უნივერსიტეტის პროფესორი	მიოკარდიუმის ინფარქტის მართვის თავისებურებები ხანდაზმულებში
	გოჩა ბარბაქაძე - ენმედიცის კლინიკის გასტროენტეროლოგი, ასოცირებული პროფესორი; მანანა ჯებაშვილი -გასტროენტეროლოგი, პოსტდიპლომური გასტროენტეროლოგიის მიმართულების რეზიდენტურის პროგრამის ხელმძღვანელი	კუჭისა და თორმეტგოჯა ნაწლავის წყლულოვანი დაავადების ატიპური მიმდინარეობა, გართულებები და მკურნალობა ხანდაზმულებში
	ნინო ხუნაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის კარდიოლოგიური მიმართულების ხელმძღვანელი	PCSK9-ის როლი კარდიო-გერიატრიულ პაციენტებში
	ნანა ეგიაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი-კარდიოლოგი, რადიოლოგი	გალექტინ-3-ისა და ექოკარდიოგრაფიული პარამეტრების მნიშვნელობა გახანგრძლივებული COVID-ის გართულებების პროგნოზში ასაკოვან პოპულაციაში (+60 წელი)
	ნათია არჩაია - არენსიას კვლევითი მედიცინის ცენტრის სამედიცინო ჯგუფის ხელმძღვანელი, ექიმი -კარდიოლოგი	შეძენილი თრომბოფილიის როლი კარდიო-ცერებრულ გართულებებში და მკურნალობის მიმართულებები დაბერების დროს
12:00-13:30	**ყავით შესვენება**	
13:30-15:30	**სესია №7 (საკონფერენციო დარბაზი №1)** **პედიატრიული და ნეონატალური კრიტიკული მედიცინა** **მოდერატორები:** ასოცირებული პროფესორები - ნინო ცხვედიანი, ლიანა ძიძიგური, თამარ გოგინაშვილი	
	ნაზიბროლა კიბორძალიძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ექიმი-ნეონატოლოგი	პოსტოპერაციულად, მოკლე ნაწლავის სინდრომით გართულებული წყლულოვან-ნეკროზული ენტეროკოლიტის მართვის აქტუალური საკითხები ნეონატალურ ასაკში
	გიორგი ტალახაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ბავშვთა ქირურგი	გასტროშიზი — ძველი, არა ახალი პრობლემა
	მაია აბალოიძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ექიმი ნეონატოლოგი	რეანიმაციული ღონისძიებები ახალშობილთა ინტენსიური თერაპიის განყოფილებაში

	ეკა ნახუცრიშვილი - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის პედიატრი	ადრენოგენიტალური სინდრომი ნეონატალურ ასაკში: დიაგნოსტიკისა და მართვის სირთულეები
	მარინა ჯორბენაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ექიმი-ნეონატოლოგი	სმიტ-ლემლი-ოპიცის სინდრომის გამოწვევები ახალშობილთა ინტენსიური თერაპიის განყოფილებაში: კლინიკური შემთხვევის განხილვა
	ჯულიეტა კიკვაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ახალშობილთა ინტენსიური თერაპიის სამსახურის უფროსი, ნეონატოლოგ-რეანიმატოლოგი	ნეიტროფილ-ლიმფოციტების შეფარდება ნეონატალური სეფსისის მქონე ქირურგიულ პაციენტებში
	თამარ გოგინაშვილი - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის კრიტიკული მედიცინის მიართულების ხელმძღვანელი, რეანიმატოლოგ-ანესთეზიოლოგი	ორგანოთა განვითარების თანდაყოლილი კომბინირებული მანკი: დიაგნოსტიკა და მართვა
	ქრისტი ფრიცი - ჰარვარდის სამედიცინო სკოლის გადაუდებელი მედიცინის დეპარტამენტის ასისტენტ-პროფესორი; ბეთ ისრაელ დიკონესის სამედიცინო ცენტრის (BIDMC) სასწრაფო სამედიცინო დახმარების სამსახურის სამედიცინო დირექტორი, აშშ	გადაუდებელი მდგომარეობები საჰაერო ფრენის დროს
13:30-15:30	**სესია №8 (საკონფერენციო დარბაზი №2)** **კლინიკური ტოქსიკოლოგია** **მოდერატორები:** ასოცირებული პროფესორი ქეთევან მაჭავარიანი, ასისტენტ - პროფესორი ეკა ქურდაძე, თეიმურაზ კობიძე	
	ქეთევან ბახტურიძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი	მეტადონით მოწამვლა საქართველოში: ნეირო- და კარდიოტოქსიურობა, პოლიორგანული უკმარისობის კლინიკური თავისებურებები
	გიორგი ოქრიაშვილი - კლინიკა რუსთავის შინაგანი მედიცინის დეპარტამენტის ხელმძღვანელი, სამხედრო ჰოსპიტლის და ამერიკული ჰოსპიტლის ექიმი ტოქსიკოლოგი	ბირთვული იარაღის დამაზიანებელი ფაქტორების გავლენა ადამიანის ორგანიზმზე
	თეიმურაზ კობიძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი -ტოქსიკოლოგი	„ტრადიციული“ ნახშირი, კომბინირებული სორბენტები და ორგანიზმის დეტოქსიკაციის ახალი შესაძლებლობები
	თამარ უმეკაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი	ალკოჰოლთან ასოცირებული მწვავე მოწამვლა და ცნობიერების მოშლა: დიფერენციალური დიაგნოსტიკის გამოწვევები გადაუდებელ ტოქსიკოლოგიაში
	სალომე დალაქიშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი	ალკოჰოლთან ასოცირებული აგრანულოციტოზი, სეფსისის რისკი და კრიტიკული ანემია: ანთების მარკერების დიაგნოსტიკური სირთულეები ქრონიკული ალკოჰოლის მოხმარების ფონზე

	გელა ბერუაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი	ტოქსიკური პანკრეატიტი და ჰეპატოტოქსიურობა: ორგანოთაშორისი დაზიანების პათოგენეზური კავშირები
	ეკა ქურდაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ტოქსიკოლოგიური მიმართულების ხელმძღვანელი, ექიმი ტოქსიკოლოგი; თსსუ ანესთეზიოლოგიის, რეანიმატოლოგიისა და ტოქსიკოლოგიის დეპარტამენტის ასისტენტ- პროფესორი	ტოქსიკური კარდიომიოპათია და კარდიოტოქსიურობის სპექტრი მძიმე ინტოქსიკაციის დროს: კლინიკური შემთხვევის განხილვა
	მარიამ მეტრეველი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი; **დავით თოფურია** - თსსუ-ის ასოცირებული პროფესორი, ექიმი ტოქსიკოლოგი	პესტიციდებით მოწამვლა: დიაგნოსტიკური სირთულეები და ღვიძლის ფულმინანტური უკმარისობა
	ლელა ასამბაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტოქსიკოლოგი	კალციუმის არხის ბლოკერებით მოწამვლა: დიაგნოსტიკური და თერაპიული გამოწვევები გადაუდებელ მედიცინაში
	ალექსანდრე ლოლაძე - რუსთავის ცენტრალური ჰოსპიტლის ანესთეზიოლოგ-რეანიმატოლოგი, კლინიკური ტოქსიკოლოგი; უნივერსიტეტ გეომედის ვიცე-რექტორი, ასისტენტ-პროფესორი	ოპიოიდური ნარკოტიკებით გამოწვეული მწვავე მოწამვლები: გართულებები და მათი პრევენცია
15:30-16:00	ლანჩი	
16:00-18:00	**სესია №7 (საკონფერენციო დარბაზი №1)** **პედიატრიული და ნეონატალური კრიტიკული მედიცინა** **მოდერატორები:** ასოცირებული პროფესორები - ნინო ცხვედიანი, ლია ძიძიგური; თამარ გოგინაშვილი (გაგრძელება)	
	ნიკოლოზ ბუაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ბავშვთა ქირურგი, ასოც. პროფესორი	საჭმლის მომნელებელი ტრაქტის სისხლდენების ლაპარასკოპიულ-ენდოსკოპიური მკურნალობა ბავშვთა ასაკში
	მარიამი ჯინჯიხაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის რეანიმატოლოგ-ანესთეზიოლოგი	ოდონტოგენური ინფექციით განპირობებული ნეკროზული ფასციიტი: დიაგნოსტირება და მენეჯმენტი
	ია ეპიტაშვილი - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის რეანიმატოლოგ-ანესთეზიოლოგი	თანდაყოლილი აივ ინფექციის დიაგნოსტირება და მენეჯმენტი ჩვილ ბავშვთა ასაკში
	რობერტ მახარაშვილი - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის რეანიმატოლოგ-ანესთეზიოლოგი	ჰემატოპოეზური ღეროვანი უჯრედების ტრანსპლანტაციის შემდგომი ნეიტროპენიული სეფსისის ადრეული ამოცნობა და მართვა ბავშვებში
	ქეთევან გაბრიაძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის რეანიმატოლოგ-ანესთეზიოლოგი	ჰიპეროქსია ბავშვთა კრიტიკულ მედიცინაში
	გვანცა კობაიძე - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის რეანიმატოლოგ-ანესთეზიოლოგი	ებშტეინ-ბარის ვირუსის იშვიათი გართულება: კლინიკური შემთხვევის განხილვა

	თამარ რატიანი - თსსუ-ის გივი ჟვანიას სახელობის პედიატრიის საუნივერსიტეტო კლინიკის ბავშვთა გადაუდებელი მედიცინის ექიმი	მწვავე სფენოიდიტით გამოწვეული სეფსისის მართვა პედიატრიულ პაციენტებში
16:00-18:00	**სესია №9 (საკონფერენციო დარბაზი №2)** **ტრავმატოლოგია და გადაუდებელი მედიცინა** **მოდერატორები:** კახა ბუკია, მერაბ კაპანაძე, გიორგი ლორია	
	ვაჟა ბარდაველიძე - კავკასიის მედიცინის ცენტრის ორთოპედ-ტრავმატოლოგი	მენჯის ძვლების მოტეხილობები
	ალექსი თიღილაური - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ორთოპედ-ტრავმატოლოგი	ნავისებური ძვლის მოტეხილობის მენეჯმენტი
	გიორგი ლომია - მედიქლაბჯორჯიას ორთოპედ-ტრავმატოლოგი	მწვავე ტრავმის მართვა გადაუდებელი დახმარების განყოფილებაში
	გიორგი ფუტკარაძე - ბათუმის სამედიცინო ცენტრის (MBC) ორთოპედ-ტრავმატოლოგი	ტაბუხის ფოსოს მასიური ძვლოვანი დეფექტების მართვა მენჯ-ბარძაყის სახსრის რევიზიული ართროპლასტიკის დროს ინდივიდუალური 3D-ბეჭდური იმპლანტატების გამოყენებით
	პაატა ზაქარაია - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ორთოპედ - ტრავმატოლოგი	ლულოვანი ძვლების მაღალენერგეტიკული ტრავმების მართვა და მენეჯმენტი
	ლევან ფანიაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ორთოპედ-ტრავმატოლოგი	თითების ნაწილობრივი ამპუტაცია: დეფექტების რეკონსტრუქცია
	ლევან გოჩიაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ორთოპედ-ტრავმატოლოგი	ლავიწ-აკრომიონის სახსრის ტრავმული ამოვარდნილობის მკურნალობა ქირურგიული წესით
	დავითი შუბითიძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ექიმი ტრავმატოლოგი	ბარძაყის ყელის მოტეხილობების მართვა ხანდაზმულ პაციენტებში

14 ნოემბერი, 2026 - მესამე დღე

თბილისის სახელმწიფო სამედიცინო უნივერსიტეტი

დრო	მომხსენებელი	თემა
09:00-10:00	**რეგისტრაცია**	
10:00-12:00	**სესია №10 (საკონფერენციო დარბაზი №3)** **ნეიროკრიტიკული მედიცინა** **მოდერატორები:** პროფესორები - შოთა ინგოროყვა, გოჩა ჩუტკერაშვილი, მირზა ხინიკაძე	
	პროფესორი მირზა ხინიკაძე - კავკასიის მედიცინის ცენტრის ნეიროქირურგი; **კოკა გოგიჩაშვილი** - ნეიროქირურგი, ნიუ ვიჭენ უნივერსიტეტი	იშემიური ინსულტის მკურნალობის თანამედროვე გამოწვევები და ქართული რეალობა

	იაკობ ცერცვაძე - დასავლეთ საქართველოს სამედიცინო ცენტრის ნეიროქირურგიული მიმართულების ხელმძღვანელი	ქირურგიული გამოსავლები და გამოჯანმრთელება კონვენციურ TLIF-სა და MIS-TLIF-ს შორის: ერთი სამედიცინო ცენტრის გამოცდილება საშუალო შემოსავლის მქონე ჯანდაცვის სისტემაში
	მარინა გოგინაშვილი - თავდაცვის სამინისტროს სამხედრო ჰოსპიტლის და შიდა ქართლის მთავარი ეპიდემიოლოგი	წითელას მიერ გამოწვეული სუბმწვავე მასკლეროზებელი პანენცეფალიტი (დოსონის დაავადება): კლინიკური მახასიათებლები და დიაგნოსტიკა
	პროფესორი ვლადიმერ წიქარიშვილი - კავკასიის მედიცინის ცენტრის ნეიროქირურგიული მიმართულების ხელმძღვანელი	მწვავე სისხლძარღვოვანი პათოლოგიები
	პროფესორი შოთა ინგოროყვა - თსსუ-ის ნეიროქირურგიის დეპარტამენტის ხელმძღვანელი	ინტერდისციპლინური ქირურგიული მკურნალობა თავის ქალას ფუძის მოტეხილობების დროს
	პროფესორი გოჩა ჩუტკერაშვილი - კლინიკა „ინოვას“ კლინიკური დირექტორი; დავით გუგავა - წმინდა მიქაელის სახელობის ჰოსპიტლის ნეიროქირურგიული განყოფილების ხელმძღვანელი	კისრის ტრავმები
	პროფესორი გოგი მაღალაშვილი - კლინიკური ონკოლოგიის ინსტიტუტის (კოი) - სამედიცინო ჰაბის ნეიროქირურგიული მიმართულების ხელმძღვანელი; **გიორგი ჭიაბერაშვილი** - კლინიკური ონკოლოგიის ინსტიტუტის (კოი) - სამედიცინო ჰაბის ნეიროქირურგიული განყოფილების ნეიროქირურგი	თანდაყოლილისისხლძარღვოვანი პათოლოგიების ჰემორაგიული გართულებების ქირურგიული მკურნალობა
	თამარ გოგიჩაიშვილი - კლინიკური ონკოლოგიის ინსტიტუტის (კოი) - სამედიცინო ჰაბის ანესთეზია-რეანიმაციის დეპარტამენტის ხელმძღვანელი	ცნობიერი კრანიოტომიის ანესთეზიოლოგიური მენეჯმენტი
	ნანა თაქთაქიშვილი - ღუდუშაურის სახელობის კლინიკის კრიტიკული მედიცინის ცენტრის ხელმძღვანელი, კავკასიის საერთაშორისო უნივერსიტეტის ასისტენტ-პროფესორი; **ლიკა ხორბალაძე** - ღუდუშაურის სახელობის კლინიკის ნეიროქირურგი, კენ ვოლკერის საერთაშორისო უნივერსიტეტის ასისტენტ-პროფესორი; **მაგდა თორთლაძე** - კავკასიის საერთაშორისო უნივერსიტეტის მედიცინის ფაკულტეტის დეკანი, ჩაჩავას კლინიკის მეან-გინეკოლოგი	გადაუდებელი ნეიროქირურგია ნეონატალურ პერიოდში

	ველოდი გახარია - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ნეიროქირურგიული მიმართულების ხელმძღვანელი; **ალექსანდრე კორძაძე** - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ნეიროქირურგიული მიმართულების ნეიროქირურგი	ხერხემლის ინფექციები და ქირურგიული მართვა
	პროფესორი მაია ბერიძე - ნერვულ სნეულებათა პროპედევტიკის და ტოპიკური დიაგნოსტიკის დეპარტამენტის ხელმძღვანელი	გიიენ-ბარეს სინდრომი ხერხემლის ტრავმის დროს
	ნანა სარალიძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ნევროლოგიური განყოფილების ხელმძღვანელი	თრომბოლიზისი
10:00-12:00	**სესია N11. (საკონფერენციო დარბაზი №1)** **შინაგანი მედიცინა** **მოდერატორები:** პროფესორები - თამარ ყანდაშვილი, მაკა ბულეიშვილი; ნინო ხუნაშვილი	
	პროფესორი მარია თეოდორაკოპულუ - ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების (ESICM) არჩეული პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების (HSICM) ვიცე-პრეზიდენტი; თსსუ-ის ვიზიტიორი პროფესორი	კრიტიკული მდგომარეობების ნუტრიციული მხარდაჭერა 2026: რას ადასტურებს რეალურად მტკიცებულებები
	თამარ სარალიძე - თსსუ-ის შინაგან დავაადებათა N1 დეპარტამენტის ასისტენტ-პროფესორი; **მედეა ჯღარკავა** - თსსუ-ის შინაგან დავაადებათა N1 დეპარტამენტის ასისტენტ-პროფესორი	პაციენტების იმუნოლოგიური სტატუსი გულის მწვავე იშემიური დაავადებების დროს
	თამარ სვანიძე - თსსუ-ის შინაგან დავაადებათა N1 დეპარტამენტის ასისტენტ-პროფესორი; **ირმა მამაცაშვილი** - თსსუ-ის შინაგან დავაადებათა N1 დეპარტამენტის ასოცირებული პროფესორი	გულ-სისხლძარღვთა და იმუნოლოგიური პარამეტრების შეფასება არტერიული ჰიპერტენზიის მქონე ორსულ ქალებში
	ეკა არზიანი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის კარდიოლოგი; **პროფესორი თამარ ყანდაშვილი** - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის თერაპიული მიმართულების ხელმძღვანელი	ჰემორეოლოგიური პარამეტრების ცვლილებები და მათი გავლენა გულის უკმარისობის მიმდინარეობაზე
	მაია გოცაძე - თსსუ-ის შინაგან დაავადებათა N3 დეპარტამენტის ასისტენტ-პროფესორი; **მარინა ნონიაშვილი** - თსსუ-ის შინაგან დაავადებათა N3 დეპარტამენტის ასოცირებული პროფესორი	პულმონური ემბოლიის დიაგნოსტიკისა და მკურნალობის თანამედროვე მიდგომები.

	ლიზა გოდერძიშვილი - კოი-სამედიცინო ჰაბის ინტენსიური თერაპიის დეპარტამენტის ხელმძღვანელი; ტვილდიანის სამედიცინო უნივერსიტეტის შინაგანი მედიცინის სარეზიდენტო პროგრამის ხელმძღვანელი	ბარიატრიული ქირურგიის შემდგომი დიაბეტური კეტოაციდოზის შემთხვევები პაციენტებში ტიპი-2 დიაბეტით
	ლალი ფაცია - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის კარდიოლოგი	აბდომინალური STEMI – გამოწვევა კრიტიკულ პაციენტებში
	ნინა ფილიპოვა - ბაუ საერთაშორისო უნივერსიტეტი, ბათუმი, ასისტენტ-პროფესორი	რევმატოლოგიური დაავადებები და გადაუდებელი ჰოსპიტალიზაცია: BAU-ს ჰოსპიტლის გამოცდილების ანალიზი
	გია ბარაბაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის გადაუდებელი მედიცინის დეპარტამენტის ხელმძღვანელი	ათეროსკლეროზით ინდუცირებული თირკმლის ქრონიკული დაავადებების (თქდ) კლინიკურ-ლაბორატორიული მონაცემებისა და ძუძუს კიბოს მარკერების ურთიერთკავშირის პროგნოზული მნიშვნელობა
	ანა შამანაძე - თოდუას კლინიკის ნეფროლოგი, ქართულ-ამერიკული უნივერსიტეტის (GAU) ასოცირებული პროფესორი	სიცოცხლის ხარისხის შეფასების მნიშვნელობა ჰემოდიალიზზე მყოფი პაციენტების მოვლისა და მართვის პროცესში
	ნათია ქათამაძე - კავკასიის უნივერსიტეტის ასოცირებული პროფესორი, კლინიკა ენმედიცის ენდოკრინოლოგი; **პროფესორი თამარ ყანდაშვილი** - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის თერაპიული მიმართულების ხელმძღვანელი	ნაწლავის მიკრობიოტა, პრობიოტიკები და სიმსუქნე: რას გვიჩვენებს არსებული სამეცნიერო მტკიცებულებები?
12:00-12:30	**ყავით შესვენება**	
12:30-13:30	**სესია №12 (საკონფერენცო დარბაზი №1)** **ხელოვნური ინტელექტი მტკიცებულებებით და ციფრული ტრანსფორმაციებით გადაუდებელ და კრიტიკულ მედიცინაში** **მოდერატორები:** პროფესორები - სანდრო გამყრელიძე, დანიელე რობერტო ჯაკობე	
	დანიელე რობერტო ჯაკობე - გენუის უნივერსიტეტის ჯანმრთელობის მეცნიერებათა მიმართულების ინფექციურ დაავადებათა დეპრატამენტის ასოც. პროფესორი, იტალია	ანტიბიოტიკების შერჩევა სისხლის ნაკადის ინფექციების დროს ინტენსიური თერაპიის განყოფილებაში: მკურნალობის მართვა ხელოვნური ინტელექტის ეპოქაში
	პროფესორი მარია თეოდორაკოპულუ - ინტენსიური თერაპიის მედიცინის ევროპული საზოგადოების პრეზიდენტი; საბერძნეთის ინტენსიური თერაპიის მედიცინის საზოგადოების ვიცე-პრეზიდენტი; თსსუ-ის ვიზიტიორი პროფესორი	ხელოვნური ინტელექტით მხარდაჭერილი ნუტრიციული მართვა ინტენსიური თერაპიის განყოფილებაში

	პროფესორი სანდრო გამყრელიძე - თბილისის სახელმწიფო უნივერსიტეტის ინფორმატიკის დეპარტამენტის ხელმძღვანელი	ინტელექტუალური რევოლუციის სტრუქტურა: ხელოვნური ინტელექტის პრინციპები და გამოყენება
	თორნიკე ზედელაშვილი - იუსტიციის სამინისტროს ციფრული მმართველობის სააგენტოს ინფორმაციული უსაფრთხოების დეპარტამენტის სპეციალისტი	ხელოვნური ინტელექტი მედიცინაში: როგორ ცვლის ახალი ტექნოლოგიები ჯანდაცვას
12:30-15:00	**სესია №13 (საკონფერენციო დარბაზი №2)** **ახალგაზრდა მკვლევართა და მეცნიერთა ფორუმი: კვლევა, ინოვაცია და მომავალი ლიდერები** **მოდერატორები:** ასოცირებული პროფესორები - შორენა ხეცურიანი, ნათია გამყრელიძე; მედიცინის ფაკულტეტის სტუდენტები - ვახტანგ მაზანაშვილი, იოსებ ნოზაძე	
	დათა კეკუტია - ენდოკრინოლოგიის ეროვნული ინსტიტუტის რეზიდენტი	ადრენომეტაბოლური დისრეგულაციის კლინიკური პროქსი-მარკერები სეფსისისა და სეპტიკური შოკის მქონე ინტენსიური თერაპიის პაციენტებში
	ელენე მელიქიძე - თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის დოქტორანტი	ახალშობილთა სკრინინგის მნიშვნელობა მძიმე კომბინირებული იმუნოდეფიციტის (SCID) დროს ინტენსიური თერაპიის განყოფილებაში მოხვედრის პრევენციისთვის: მაღალი სიხშირის ახლონათესაური ქორწინებების მქონე კოჰორტის მაგალითზე დაყრდნობით
	ნინო კეკენაძე - ონკოლოგიის რეზიდენტი, პინეო სამედიცინო ეკოსისტემა	ონკოლოგია და გადაუდებელი მედიცინა - როცა დრო განაპირობებს გამოსავალს
	მარიამ გიორგაშვილი - თსსუ-ის პედიატრიის რეზიდენტი, კლინიკა ,,რეიმანის ‘‘უმცროსი ექიმი	გახანგრძლივებული ფებრილური კრუნჩხვების მართვა ბავშვებში
	თამარ ბურჯანაძე - თსსუ-ის კარდიოლოგიის რეზიდენტი, კლინიკა ,,რეიმანის‘‘უმცროსი ექიმი	ტროპონინის მიღმა: მწვავე მიოკარდიუმის ინფარქტის მართვის ახალი გააზრება გადაუდებელი დახმარების განყოფილებაში.
	მარიამ წანაწყენიშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის უმცროსი ექიმი	ოდონტოგენური ინფექციიდან მედიასტინიტამდე: სიცოცხლისთვის საშიში ქირურგიული გადაუდებელი მდგომარეობა
	ნინო ორმოცაძე - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგიისა და რეანიმატოლოგიის რეზიდენტი	ანტიბიოტიკორეზისტენტობის გენების პროფილი, მისი კავშირი დაავადების მიმდინარეობის სიმძიმესთან, პათოფიზიოლოგიურ მაჩვენებლებთან და გამოსავალთან.

	თეონა აივაზაშვილი - თსსუ-ის პირველი საუნივერსიტეტო კლინიკის ანესთეზიოლოგიისა და რეანიმატოლოგიის რეზიდენტი	თირკმლის მწვავე დაზიანების მართვა სითხის გადატვირთვის მქონე კრიტიკულად მძიმე პაციენტებში
	საბა რურუა - თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის მედიცინის ფაკულტეტის სტუდენტი **ხელმძღვანელი: ლევან რატიანი**	პაციენტის მოვლა და ადრეული რეაბილიტაცია
13:30-15:30	**მარინე მიქოიანი** - პირველადი დახმარების ცენტრის ინსტრუქტორი **ტრენინგ-კურსი** - BLS - გულ-ფილტვის რეანიმაციის (CPR) ძირითადი ასპექტები. (საკონფერენციო დარბაზი №4)	
15:00-16:00	**ლანჩი**	
16:00-17:00	**მაღალი დონის ექსპერტთა მრგვალი მაგიდა** (საკონფერენციო დარბაზი №4) **მონაწილეები:** მარია თეოდორაკოპოულოუ, არზუ თოფელი (ისქითი), დესპოინა კოულენტი, ქრისტი ფრიცი, თომას მუზიხი, ირინა რომანავა, ლევან რატიანი, ნონა კაკაურიძე, შოთა გოლიაძე, რამაზ კალანდაძე, გია ბარაბაძე, ამირან გოგიტიძე, თამარა მეგრელიშვილი, ელენე პაჭკორია, ლუიზა გაბუნია, თამარ დიდბარიძე, ვახტანგ შოშიაშვილი, ქეთევან მაჭავარიანი, ცოტნე სამადაშვილი, თამარ ყანდაშვილი. **გადაუდებელი და კრიტიკული მედიცინის მომავალი: ინტეგრირებული, მდგრადი და მტკიცებულებებზე დაფუძნებული სისტემის შექმნა:** ● ინტენსიური თერაპიის განვითარების პერსპექტივები საქართველოში ● ანტიმიკრობული რეზისტენტობის პრობლემები და მათი მართვის სტრატეგიები; ● მულტიდისციპლინური თანამშრომლობა გადაუდებელ მედიცინაში; ● ლოგინობის ხანის მწვავე მდგომარეობების მართვის თანამედროვე მიდგომები.	
16:00-18:00	სესია **№13** (საკონფერენციო დარბაზი №2) **ახალგაზრდა მკვლევართა და მეცნიერთა ფორუმი: კვლევა, ინოვაცია და მომავალი ლიდერები** **მოდერატორები:** ასოცირებული პროფესორები - შორენა ხეცურიანი, ნათია გამყრელიძე; მედიცინის ფაკულტეტის სტუდენტები - ვახტანგ მაზანაშვილი, იოსებ ნოზაძე (გაგრძელება)	
	ელენე სარიბეკოვი - თსსუ-ის ინფექციური სნეულებების რეზიდენტი **ხელმძღვანელი: ლევან რატიანი**	ფილტვის ულტრაბგერითი შეფასება ინტენსიურ თერაპიაში: დიაგნოსტიკური პრინციპები, კლინიკური გამოყენება, ხელოვნური ინტელექტის დახმარებით ინტერპრეტაცია
	კესო ხაჩიძე - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: ქეთი დალაქიშვილი**	დაუდგენელი ეტიოლოგიის მწვავე თირკმლის დაზიანება და მისი მართვა თირკმლის შემცვლელი თერაპიით: კლინიკური შემთხვევის განხილვა

	მაგდა მახათაძე - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: ნათია გამყრელიძე**	გლუკონეოგენეზის როლი გადაუდებელ მედიცინაში: მეტაბოლური ადაპტაცია კრიტიკულ მდგომარეობებში
	მარიამ ვარაზაშვილი - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: ველოდი გახარია**	კუშინგის ტრიადა, როგორც თავის ტვინის თიაქრის განვითარების მოსალოდნელი კლინიკური ინდიკატორი: დიაგნოსტიკური ღირებულება და გადაუდებელი მართვა
	მარიამ კახაბერი - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელები: კოკა კაჭარავა, მანანა გონგაძე**	ინფუზიური თერაპიის თანამედროვე მიდგომები სეპტიური შოკის დროს: კრისტალოიდებისა და კოლოიდების გამოყენება
	ანა ბოხუა, ქრისტინა მენაბდე - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტები. **ხელმძღვანელი: კახაბერ ჭელიძე**	როდესაც საკვების მიღება ოფლიანობას იწვევს: პოსტტრავმული ფრეის სინდრომის კლინიკური შემთხვევა
	ნინო გელაშვილი - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელები: მაია სვანიძე, ნელი ფხალაძე**	ადრენალური კრიზი, სიცოცხლისთვის საშიში ენდოკრინული გადაუდებელი მდგომარეობა - კლინიკური შემთხვევა
	ამიკო თუთბერიძე, ვახტანგი მაზანაშვილი - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტები, სამეცნიერო-კვლევითი კლუბის "ნექსუსის" წევრები. **ხელმძღვანელები: მაგდა რურუა, ლუიზა გაბუნია**	ტოქსიკური და ალერგიული გენეზის კრიტიკული მდგომარეობები ინტენსიურ თერაპიაში: კარდიორესპირაციული სინდრომების დიფერენციული დიაგნოსტიკა და მართვა
	ანა გაბუნია - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: ლუიზა გაბუნია**	დარიშხანით ინტოქსიკაცია და მისი მართვის თანამედროვე მიდგომები
	გვანცა ხუროშვილი - კავკასიის საერთაშორისო უნივერისტეტის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო-კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელები: კოკა კაჭარავა, შორენა ხეცურიანი**	ცეფეპიმი/ზიდებაქტამი: ახალი სტრატეგია მულტირეზისტენტული გრამ-უარყოფითი ინფექციების წინააღმდეგ და მისი პოტენციური მნიშვნელობა სეფსისის დროს
	თემური კოპაძე - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო-კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: ივლიტა ხვედელიძე**	მძიმე პოლიტრავმის მართვა რვასართულიანი შენობიდან გადმოვარდნის შემდეგ: კლინიკური შემთხვევის განხილვა და საერთაშორისო გაიდლაინებთან შესაბამისობის შეფასება

	იოსებ ნოზაძე - თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო- კვლევითი კლუბის "ნექსუსის" წევრი. **ხელმძღვანელი: გიორგი სექანია**	სუბდურული ჰემატომის ეპიდემიოლოგიური ტენდენციები და კლინიკური მართვა: გლობალური და ლოკალური პერსპექტივები
	ზურაბ ჩოჩია – თსსუ-ის მედიცინის ფაკულტეტის სტუდენტი, სამეცნიერო-კვლევითი კლუბის „ნექსუსის" წევრი **ხელმძღვანელი: კახაბერ ბუკია**	იზოლირებული დაზიანება თუ სისტემური ტრავმა? დაზიანების კონტროლის რეანიმაცია დეკომპენსირებულ ხანდაზმულ პაციენტში
	მარიამ ნამგალაძე, საბა პაპიაშვილი - თბილისის სახელმწიფო უნივერსიტეტის მედიცინის ფაკულტეტის სტუდენტები, სამეცნიერო-კვლევითი კლუბის „ნექსუსის" წევრები **ხელმძღვანელი: ველოდი გახარია**	სამწვერა ნერვის ნევრალგია: გადაუდებელი მართვა და ნეიროქირურგიული ასპექტები
18:00-18:30	**კონფერენციის დახურვა/შეჯამება/სერტიფიკატების გადაცემა** (საკონფერენციო დარბაზი N2)	



Georgian Scientists
ქართველი მეცნიერები
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REHOSPITAL MANAGEMENT OF SEPSIS

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Sepsis affects an estimated 166 million patients yearly and 21.4 million sepsis-related deaths occurred worldwide in 2021, accounting for nearly one-third (31.5%) of all global deaths, and EMS clinicians are often the first to encounter these patients. This lecture briefly reviews the definitions of sepsis, septic shock, and SIRS, and the limited performance of bedside screening tools. It reviews the evidence on early fluid resuscitation versus early vasopressors, including the NHLBI PETAL trial, which showed no mortality difference between restrictive and liberal strategies, and discusses the emerging role of prehospital point-of-care lactate for identifying patients at higher risk of death. The talk compares push-dose pressors, which are useful as a short-term bridge for peri-intubation or transient hypotension but carry a risk of dosing error, with continuous pressor infusions, which provide sustained and titratable hemodynamic support and are best for persistent shock and long transports. It also addresses stress-dose steroids, which are reserved for refractory shock and for patients with known adrenal insufficiency or chronic steroid use.

The second half focuses on prehospital antibiotics. Existing evidence is largely neutral: the PHANTASi randomized trial found no mortality, ICU admission, or length-of-stay benefit, and a recent French physician-staffed unit cohort found no difference in 28-day mortality (39.0% vs 38.5%), with a high blood culture positivity rate (35.4%) and low contamination rate (3.1%). The talk reviews logistical concerns, including culture bottle availability, contamination risk, and the lower sensitivity of cultures drawn after antibiotics. A review of US statewide EMS protocols found that only 4 of 30 states include antibiotics for sepsis (ceftriaxone most commonly, with cefazolin and moxifloxacin also used), compared with 11 states for open fractures. Prehospital sepsis alerts, however, shortened the time to IV fluids (6 minutes), blood cultures and lactate (12 minutes), and antibiotics (33 minutes). Key takeaways are early recognition, early fluids and pressors when needed, management of fever, hypoglycemia, and hypoxia, antibiotics where system protocols allow, and early hospital notification using "sepsis alert" language.

Keywords: Prehospital Sepsis Management, Septic Shock, Prehospital Antibiotics, Fluid, Resuscitation and Vasopressors, Point-of-Care Lactate

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TRAUMATIC HEMORRHAGE AND MASSIVE TRANSFUSION PROTOCOLS

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Hemorrhage remains the leading preventable cause of death in trauma, and massive transfusion protocols (MTPs) have become standard of care, now almost ubiquitous in major trauma centers. This lecture reviews the history of transfusion medicine and the pathophysiology of trauma-induced coagulopathy, including the lethal triad and acute coagulopathy of trauma-shock. It examines the evidence that structured MTPs and protocol compliance improve outcomes, along with strategies for identifying patients who need activation, including clinical gestalt, shock index, and scoring systems such as the ABC score. The talk then reviews the landmark studies, which support balanced resuscitation strategies. It also covers transfusion best practices, common MTP challenges and approaches to guiding ongoing resuscitation using vital signs, laboratory targets, and viscoelastic testing, including the neutral ITACTIC trial.

The presentation closes with emerging and evolving practices, along with recent evidence updates through 2026. Topics include cell salvage, liquid plasma, prehospital blood products, and the importance of early calcium repletion, TXA, and cryoprecipitate. Observational data had suggested a mortality benefit for whole blood, but two large 2026 randomized trials (TOWAR and SWiFT) found no significant difference compared with component therapy, and a 2025 Cochrane review found no clear RCT-level consensus on optimal transfusion strategy. Whole blood therefore remains logistically attractive, particularly in EMS and austere settings, but should no longer be presented as a proven mortality-reduction strategy. Key take-home points are to maintain balanced resuscitation, invest in program development and quality assurance, give calcium and TXA early, and recognize that evidence on ongoing MTP guidance continues to evolve.

Keywords: Massive Transfusion Protocol (MTP), Trauma-Induced Coagulopathy (TIC), Hemorrhagic Shock, Balanced Resuscitation

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INFLIGHT EMERGENCIES

Christie L Fritz

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Roughly 5 billion passengers fly commercially each year, about 1 billion of them in the US, and in-flight medical emergencies occur on approximately 1 in every 604 flights. Physicians and other clinicians on board are often asked to respond with little information and limited resources, in an environment with cabin pressurization equivalent to altitudes up to 8,000 feet, a lower partial pressure of oxygen, and low humidity. This lecture offers a practical approach to responding to in-flight emergencies. It starts with establishing who is available to help and it frames the responder's role around four tasks: assessment, basic stabilization, discussion of diversion, and communication with ground-based medical control. The talk reviews what is available on board, including the Emergency Medical Kit (AED, oxygen, basic airway equipment, IV supplies, and a limited, airline-specific formulary). It also covers the role of ground-based medical control services, which can assist with the ultimate diversion decision, particularly for unstable MI or arrhythmia, stroke, refractory hypoxia, persistent altered mental status, seizures, and hemodynamic instability. Because diversions occur in only 7–10% of emergencies, the talk emphasizes improvising with limited equipment and sound clinical judgment.

The second half addresses the legal and liability concerns that often keep clinicians from volunteering. It reviews the US Aviation Medical Assistance Act (1998), which protects responders who act in good faith and without gross negligence, including physicians not licensed in the aircraft's destination state. It also covers Good Samaritan laws, open questions about international flights and payment, and the fact that lawsuits typically target airlines, crew actions, or equipment availability rather than responding clinicians. The talk closes by identifying the behaviors that carry real risk: grossly negligent care such as dangerous medication dosing without an indication, misrepresenting credentials, continuing invasive care when safer options like diversion are available, and acting while impaired.

Keywords: In-Flight Medical Emergencies, Ground-Based Medical Control, Flight Diversion, Aviation Medical Assistance Act (AMAA)

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HETEROCHROMATIN AND NOR ALTERATIONS IN DUCTAL BREAST CANCER

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After the completion of the Human Genome Project, the strategic direction of modern genetics shifted towards functional genomics, which also includes non-coding regions of DNA. Total non-coding DNA and satellite stalk with ribosomal cystrons, comprising repetitive sequences of nucleotides localized in heterochromatin. The functions of heterochromatin remain unclear. The present study aims to investigate total heterochromatin and NOR heterochromatin in patients with Ductal Breast Cancer (DBC) with the bioregulator Livagen and a heavy metal (CoCl2) (LCo). The level of total heterochromatin by differential scanning microcalorimetry showed the melting point of heterochromatin indicating slight chromatin heterochromatinization.

Intensity of ribosomal cystrons of chromatid satellite stalks (NOR heterochromatin) in 32 lymphocyte cultures from healthy individuals and the 18 from patients with DBC, and DBC with the bioregulator and a heavy metal have been studied.

The activity of ribosomal cystrons of chromatid on the 15 chromosomes included in satellite associations in the control group was reduced compared to the activity of other chromatids (14 = 21 = 22 > 13 > 15). But, the chromatids 15 chromosome patients with DBC, compared to the control group had high activity inclusion in associations corresponded to order: (15 > 21>22= 13 = 14) ($p < 0.001$). The activity ribosomal cistrons the type of association on chromosomes 15:15 in patients with DBC also was significantly increased ($p < 0.001$). However in patients with DBC + LCo, the activity ribosomal cistrons of chromatids on chromosome 15 and the frequency of association 15:15 was reduced ($p < 0.001$), which was mainly in line with the data of middle age. Our results indicated the differential activity of ribosomal cystrons of chromatids of chromosome 15 in patients with DBC (significantly increased) and DBC with the LCo (significantly reduced) in contrast to the control group. The study of acrocentric chromatids with epigenetic variability in the activity of ribosomal genes in pathology is a new direction in medicine, indicating the diagnosis of diseases and defining a new treatment strategy in the future.

Keywords: Ductal Breast Cancer, Heterochromatin, Nucleolar Organizer Regions (NOR), Ribosomal cistrons, Epigenetic variability

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THE USE OF CARDIOVASCULAR COMPLICATION MARKERS IN THE URGENT CARE MANAGEMENT OF LONG COVID

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Introduction: According to contemporary epidemiological data from the Global Burden of Disease (GBD), the absolute rate of cardiovascular (CV) accidents in the elderly population (60+) is increasing sharply. This dynamic is critically accelerated by post-COVID-19 syndrome (Long COVID). Diagnosing Long COVID in older adults using the American 12-point RECOVER index is frequently challenging due to an atypical clinical presentation and overlapping symptoms.

Aim of the Study: The aim of this paper is to conduct an in-depth analysis of current scientific literature to identify specific clinical markers against the background of established pathomechanisms and biomarkers. Identifying these markers will enable early detection of the negative impact of post-COVID-19 syndrome in the elderly, thereby preventing subsequent cardio-cerebral catastrophes and reducing mortality rates in this vulnerable population.

Pathophysiology: This paper reviews the link between the molecular cascade of post-COVID-19 systemic thromboinflammation, macro- and microvascular dysfunction (ANOCA/INOCA), neurodegeneration, and accelerated senescence in the elderly. The pathophysiology of COVID-19 is conceptualized as a biphasic—slowly and rapidly progressing—connective tissue, immune, and thromboinflammatory condition driven by the prolonged tissue persistence of viral antigens (spike and nucleocapsid proteins). This persistence induces premature lymphocyte aging (immunosenescence) and telomere decondensation, undermining cellular regeneration. Because the endothelial response is systemic, CV dysfunction occurs synchronously with cerebral small vessel disease (CSVD), programming premature biological aging.

Key Molecular and Clinical Markers: Since identifying every single marker is impractical in routine clinical practice, this study focuses on core biomarkers that simultaneously reflect myocardial and cerebral injury at the micro-level, serving as essential tools for clinical monitoring:

- Apolipoprotein A1 (ApoA-1) Decline and Elevated Homocysteine: A decrease in ApoA-1 dismantles the natural anti-inflammatory shield, triggering lipid peroxidation. Concurrently, hyperhomocysteinemia directly damages the endothelium and exacerbates atherothrombotic processes.
- IL-18: Functions as a master mediator of the pro-inflammatory cascade, activating inflammasome, amplifying vascular inflammation, and contributing to atherosclerotic plaque instability.
- Elevated P-Selectin: Drives endothelial adhesion, leading to microvascular ischemia in the heart and blood-brain barrier disruption.
- Chronic D-Dimer Elevation: Confirms ongoing, accelerated microthrombosis, significantly increasing ischemic stroke risks in elderly individuals.
- Nuclear Factor kappa B (NF-κB): Acts as a molecular switch triggering neuroinflammation and activating tau protein hyperphosphorylation, leading to the pathological assembly of neurofibrillary tangles.

Conclusion: This study confirms that Long COVID acts as a biological catalyst for accelerated senescence, manifested through telomere decondensation and immune cell exhaustion. Coronary microvascular pathology and neurodegenerative brain injury represent two distinct manifestations of the same systemic endotheliitis. Early monitoring of these dual-action clinical markers (including Homocysteine and IL-18) is vital for preventing premature dementia, fatal strokes, and early mortality in the elderly population.

Keywords: Long COVID, Gerontology, Thromboinflammation, CVD

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THE ROLE OF PCSK9 IN CARDIO-GERIATRIC PATIENTS

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Background: Proprotein convertase subtilisin/kexin type 9 (PCSK9) plays a pivotal role in the progression of atherosclerotic cardiovascular disease (ASCVD) by regulating low-density lipoprotein receptor (LDLR) degradation. In cardio-geriatric patient cohorts aged 60 and older, the association between circulating PCSK9, low-density lipoprotein cholesterol (LDL-C) elevation, and acute myocardial infarction (MI) phenotypes is highly pronounced. Emerging evidence indicates that PCSK9 actively promotes systemic vascular inflammation, macrophage foam cell formation, and necrotic core expansion independently of baseline lipid parameters. Diagnosing and managing hypercholesterolemia in this elderly population remains clinically challenging due to high rates of statin intolerance, age-related metabolic shifts, multi-morbidity, and advanced endothelial senescence.

Objective: this clinical study evaluates the specific relationship between plasma PCSK9 levels, LDL-C, and coronary atherosclerosis progression. It establishes the explicit biomarker profile of geriatric patients (60+) during the acute and subacute phases of MI within the Georgian population.

Methods: A rigorous clinical evaluation was performed on the patients with MI aged 60 to 85 years admitted to the TSMU First University Clinic. Fasting peripheral blood samples were systematically collected to quantify circulating PCSK9 concentrations and standard lipid fractions. Comprehensive correlation analyses tracked lipid-dependent and non-lipid dependent inflammatory trends. Detailed cardiovascular imaging and multi-variable regression protocols were deployed to assess the direct correlation between elevated PCSK9 expressions, plaque vulnerability, and ischemic recurrence risk across age-stratified geriatric brackets.

Results: The findings demonstrate a distinct, statistically significant positive correlation between elevated plasma PCSK9 expressions and circulating LDL-C fractions during both acute and subacute MI phases in patients over 60 years old. High PCSK9 titers strongly correlate with aggressive coronary artery disease (CAD) phenotypes and accelerated atherogenesis in older adults. Beyond standard receptor degradation, PCSK9 acts as an autonomous inflammatory mediator, accelerating vascular remodeling and plaque destabilization in aging vessels. Incorporating targeted PCSK9 inhibitors into geriatric triage protocols achieves a profound, sustained LDL-C reduction, drastically minimizing residual atherothrombotic risk and ischemic stroke occurrence in these elderly cohorts.

Conclusion: This study confirms that elevated plasma PCSK9 serves as a vital prognostic indicator for early myocardial infarction and advanced coronary atherosclerosis in cardio-geriatric patients aged 60+. Early screening of this biomarker matrix provides a powerful clinical mechanism for risk stratification. Implementing personalized PCSK9 targeting therapies offers an exceptionally effective, well-tolerated lipid-lowering strategy, optimizing therapeutic adherence and long-term functional survival rates within vulnerable geriatric populations.

Keywords: PCSK9, Myocardial Infarction, Cardio-Geriatrics, Elderly

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SIGNIFICANCE OF GALECTIN-3 AND ECHOCARDIOGRAPHIC PARAMETERS IN PREDICTING LONG-COVID COMPLICATIONS IN THE OLDER POPULATION

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Background: The post-acute sequelae of COVID-19 (Long-COVID) present a critical clinical challenge in elderly individuals aged 60 years and older. In this vulnerable population, the convergence of persistent systemic inflammation and accelerated myocardial fibrosis acts as a primary substrate for high-risk cardiovascular events. Identifying reliable, non-invasive diagnostic strategies tailored for older adults is essential to anticipate urgent clinical deterioration and mitigate mortality risks.

Objective: To evaluate the combined prognostic utility of serum Galectin-3 (Gal-3)—a prominent pro-fibrotic and inflammatory biomarker—and specific echocardiographic parameters in predicting adverse outcomes, including heart failure exacerbation and cardiac death, secondary to post-COVID myocardial fibrosis in elderly patients.

Methods:A retrospective and observational review was conducted on hospitalized and post-discharge COVID-19 patients aged 60 and older treated at the First University Clinic of TSMU. Serum Galectin-3 concentrations were quantified alongside comprehensive transthoracic echocardiographic (TTE) and electrocardiographic (ECG) assessments during the acute and post-acute phases.

Results: Fibrosis-Driven Arrhythmogenesis & Cardiac Death: In the +60 cohort, persistently elevated Galectin-3 served as a direct surrogate marker for progressive myocardial fibrosis. This fibrotic remodeling creates an unstable electrical substrate, driving severe ventricular arrhythmias and escalating the long-term risk of cardiac death.

Urgent Heart Failure & Mortality Risks: High Gal-3 levels during the post-COVID phase strongly predicted urgent hospital readmissions for new-onset or worsening heart failure. The biomarker

successfully stratified patients at the highest risk for cardiovascular mortality and acute hemodynamic collapse.Left-Heart Remodeling: Elevated Gal-3 demonstrated a strong, statistically significant correlation with structural left-heart alterations in the +60 cohort, most notably left atrial (LA) enlargement and markers of left ventricular diastolic dysfunction, worsening the mechanical burden.Right-Heart Strain: Higher biomarker concentrations were closely linked to adverse changes in the right side of the heart, reflecting right ventricular strain and adaptive remodeling secondary to elevated pulmonary artery pressures.

Conclusion: Serum Galectin-3 is a highly sensitive prognostic biomarker for post-COVID myocardial fibrosis in the +60 population. Integrating Gal-3 tracking with targeted echocardiographic profiling provides a powerful clinical instrument to predict life-threatening complications, such as heart failure and cardiac death, allowing for timely, life-saving interventions in vulnerable older patients.

Keywords: Galectin-3, Echocardiography, Myocardial Fibrosis, Heart Failure, Aged Population, Cardiac Death.

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THE ROLE OF ACQUIRED THROMBOPHILIA IN CARDIO-CEREBRAL COMPLICATIONS AND TREATMENT APPROACHES IN AGING

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Background: Vascular aging serves as a foundational driver for systemic thromboembolic diseases, primarily driven by persistent endothelial dysfunction, vascular stiffness, and altered hemorheological dynamics. In the geriatric cohort, the threat is heavily exacerbated by acquired thrombophilia—a hypercoagulable state triggered by external factors such as chronic low-grade systemic inflammation, malignancies, prolonged immobility, and metabolic disorders. Unlike inherited hypercoagulable conditions, acquired thrombophilias progressively compound with age, transforming subclinical vascular changes into acute, life-threatening clinical episodes. Understanding the unique mechanism by which acquired clotting risks trigger macrovascular and microvascular catastrophes is vital for designing safe prophylactic strategies in aging populations.

Objective: To systematically evaluate the clinical impact of acquired thrombophilia on the development of cardio-cerebral ischemic complications in patients aged 60 and older. Additionally, this study investigates the efficacy and safety profiles of modern personalized antithrombotic treatment algorithms designed to minimize both recurrent thromboembolic events and catastrophic bleeding risks in elderly individuals.

Methods: A comprehensive retrospective clinical evaluation was performed on elderly patients presenting with cardio-cerebral complications at the Arensia Research Center. All subjects underwent an integrated diagnostic workup including biomarkers for hypercoagulability, hyperhomocysteinemia screening, and antiphospholipid antibody profiling. Vascular evaluations were performed via advanced neuroimaging and high-resolution transthoracic echocardiography to identify subclinical thrombi and quantify endothelial strain. Longitudinal data tracked the clinical outcomes of targeted therapies using Direct Oral Anticoagulants (DOACs) versus adjusted low-dose antiplatelet regimens over a 24-month post-discharge follow-up period.

Results: Clinical assessments demonstrated that acquired thrombophilic markers—specifically elevated procoagulant factors and persistently positive antiphospholipid antibodies—significantly correlated with accelerated cardio-cerebral events in aging cohorts. In patients over

60, hypercoagulability directly multiplied the relative risk of acute ischemic strokes, transient ischemic attacks (TIAs), and multi-infarct cognitive decline. On the cardiac spectrum, acquired thrombophilia served as a critical secondary trigger for acute coronary syndrome (ACS) and mural thrombus formation, particularly in hearts already compromised by age-related atrial fibrillation. Regarding therapeutic pathways, standard antithrombotic approaches often induced unacceptably high hemorrhagic transformations due to fragile senescent vessels. Conversely, personalized antithrombotic regimens leveraging low-dose DOACs (e.g., rivaroxaban or apixaban) balanced with strict endothelial protection protocols yielded a 34% reduction in recurrent ischemic events without increasing major gastrointestinal or intracranial bleeding.

Conclusion: Acquired thrombophilia represents a major, yet under-diagnosed, driver of cardio-cerebral morbidity and mortality within the aging population. Combining targeted biomarker profiling with tailored, low-dose anticoagulant strategies offers a superior clinical methodology to mitigate ischemic risk, optimize vascular health, and ensure patient safety in geriatric medicine.

Keywords: Acquired Thrombophilia, Vascular Aging, Ischemic Stroke, Myocardial Infarction, Geriatric Cardiology, Antithrombotic Management.

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ATYPICAL COURSE, COMPLICATIONS AND TREATMENT OF GASTRIC AND DUODENAL PEPTIC ULCER DISEASE IN OLDER ADULTS

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Background: Peptic ulcer disease (PUD) affecting the stomach and duodenum in older adults presents a distinct clinical paradigm characterized by silent, aggressive, and highly atypical phenotypes. Age-related mucosal atrophy, compromised microvascular perfusion, and structural changes drastically alter the defensive mechanisms of the gastroduodenal barrier. Consequently, life-threatening complications like acute gastrointestinal hemorrhage or visceral perforation frequently manifest as the primary clinical presentation in emergency departments without any prior classic warning signs or dyspeptic history.

Objective: Based on the scientific update works, this study evaluates the distinct clinical and pathophysiological features characterizing the atypical progression of gastric and duodenal ulcers in geriatric patient populations. It aims to optimize early diagnostic matrices and reduce mortality rates associated with silent gastroduodenal lesions.

Methods: A comprehensive retrospective clinical analysis was conducted on elderly patient cohorts presenting with confirmed PUD complications. Diagnostic stratification evaluated structural mucosal changes via upper endoscopy, comprehensive polypharmacy mapping, and *Helicobacter pylori* testing metrics. Pathophysiological trends were correlated with clinical presentation variations, specifically analyzing the masking effects of medications and age-dependent neuro-sensory visceral variations.

Results: The findings indicate that 30% to 40% of geriatric PUD cases develop completely asymptomatically, demonstrating a classic "silent" clinical course. This painless progression is driven by the age-related atrophy and reduced sensitivity of visceral nociceptive nerve receptors, which effectively blocks classical pain signaling pathways. Furthermore, widespread polypharmacy—specifically the frequent use of non-steroidal anti-inflammatory drugs (NSAIDs) for chronic arthralgia—suppresses prostaglandin synthesis, directly damaging the mucosal lining

while masking ulcer-induced distress. Instead of typical epigastric burning, the disease manifests through atypical equivalents, including early satiety, anorexia, unexplained weight loss simulating malignancy, or referred pain in the chest and back. Primary presentation with severe complications remains exceptionally high; occult bleeding often presents solely as progressive iron-deficiency anemia or chronic fatigue. Massive hemorrhage rarely self-terminates due to advanced age-related arteriosclerosis. Crucially, visceral perforation frequently occurs without abdominal rigidity, presenting instead as sudden-onset delirium, unexplained tachycardia, or profound hypovolemic and septic shock.

Conclusion: PUD in older adults represents a high-risk clinical entity that bypasses classic symptom thresholds due to visceral desensitization and heavy NSAID use. High *H. pylori* prevalence coupled with extensive polypharmacy exponentially elevates the incidence of sudden, painless perforation and refractory bleeding. Incorporating proactive endoscopic screenings and strict pharmacological management is vital to mitigate devastating catastrophes and optimize survival outcomes in vulnerable elderly cohorts.

Keywords: Peptic Ulcer, Geriatrics, Polypharmacy, Perforation

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THE ROLE OF GLUCONEOGENESIS IN EMERGENCY MEDICINE: METABOLIC ADAPTATION IN CRITICAL CONDITIONS

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Introduction: Critical illness, including sepsis, severe trauma, and prolonged fasting, triggers significant metabolic changes aimed at maintaining energy supply to vital organs. Gluconeogenesis is an essential metabolic pathway through which glucose is produced from non-carbohydrate sources, such as lactate, glycerol, and amino acids; however, glucose homeostasis **in critical illness and acute emergency conditions** is also influenced by glycogenolysis, peripheral insulin resistance, and alterations in glucose utilization. Understanding these interconnected mechanisms is key to interpreting glycemic fluctuations and the body's adaptive response to severe physiological stress.

Methods: This narrative review examines the role of gluconeogenesis in glucose homeostasis during acute medical emergencies and critical illness. Relevant literature was searched in PubMed/MEDLINE and Google Scholar using combinations of **the following terms:** "gluconeogenesis," "emergency medicine," "hypoglycemia," "stress hyperglycemia," "sepsis," "trauma," and "acute liver failure." Particular attention was given to the hormonal and inflammatory regulation of gluconeogenesis, alterations in endogenous glucose production, and their clinical implications for the assessment and management of acute metabolic disturbances.

Results: Evidence demonstrates that critical illness markedly alters endogenous glucose production through inflammatory cascades, counterregulatory hormone release, and peripheral insulin resistance. While gluconeogenesis sustains glucose availability, particularly as glycogen stores deplete, its dysregulation may contribute to stress hyperglycemia, whereas impaired endogenous glucose production may contribute to hypoglycemia, particularly in conditions such as acute liver failure. These disturbances are clinically relevant in emergency and intensive care settings. Furthermore, amino acid mobilization to support gluconeogenesis is associated with protein catabolism and may contribute to skeletal muscle loss during prolonged critical illness.

Conclusion: Gluconeogenesis plays a pivotal role in metabolic adaptation during critical illness **and acute medical emergencies**. Understanding its regulatory mechanisms, **together with the roles of glycogenolysis and peripheral glucose utilization,** provides valuable clinical insights into glycemic control and metabolic **assessment** in emergency and intensive care settings. Further research is warranted to elucidate the relationship between **alterations in endogenous glucose production** and patient outcomes.

Keywords: Gluconeogenesis, Critical Illness, Emergency Medicine, Metabolic Adaptation, Glucose Homeostasis

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TOXIC CARDIOMYOPATHY AND THE SPECTRUM OF CARDIOTOXICITY IN SEVERE POISONING: A CASE STUDY

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Background. Poisoning can injure the heart through direct myocyte toxicity, rhythm and conduction disturbances, vasodilation and hypoxic-ischemic damage. Troponin elevation with ventricular dysfunction is easily mistaken for acute coronary syndrome.

Case presentation. A 19-year-old man was transferred from another hospital, intubated and on inotropic support for shock, after loss of consciousness following use of an unknown narcotic; a urine immunoassay there was positive for methadone. Troponin I had risen from 0.94 to 1.6 ng/mL there and was 6.49 ng/mL (normal ≤0.03) in our laboratory. He was referred for coronary angiography. On arrival, BP was 122/79 mmHg on norepinephrine (0.3 μg/kg/min), heart rate 53/min with sinus bradycardia and no acute focal ECG changes, pupils were miotic, potassium 3.08 mmol/L, lactate 1.36 mmol/L and CRP <5 mg/L. Chest radiograph showed perihilar infiltrates and coronary angiography showed intact arteries. First echocardiography showed ejection fraction (EF) 35%, diffuse hypokinesia, impaired relaxation and mild pulmonary hypertension (PASP 35 mmHg).

Management and course. Mechanical ventilation, infusion therapy and potassium correction continued; norepinephrine was tapered and stopped, and he was extubated on day 3. A second echocardiography 16 hours after the first showed EF 55% (58% on day 3), and troponin I was 0.03 ng/mL by day 6. Antibacterial therapy was added for rising inflammatory markers (CRP 167 mg/L on day 4, 9 mg/L on day 8). A repeat cardiac marker was negative during chest pain and anxiety on day 4. He was discharged on day 8, hemodynamically stable.

Discussion. Intact coronary arteries and absent ST changes excluded acute coronary syndrome; troponin elevation with rapidly reversible left ventricular depression indicated toxic cardiomyopathy. Likely mechanisms are direct methadone effects on myocardial ion channels, hypoxia from respiratory depression, and catecholamine or inotrope exposure; recovery of EF within 16 hours suggests myocardial stunning rather than necrosis, although changing loading

conditions and inter-study variability may contribute. Methadone cardiotoxicity spans bradycardia, QT prolongation and arrhythmia, reversible cardiomyopathy and cardiac arrest, whereas calcium channel blocker poisoning typically causes vasodilatory shock with preserved EF; echocardiography helps separate these patterns.

Conclusion. In poisoning with troponin elevation and new ventricular dysfunction, early coronary angiography and serial echocardiography distinguish toxic cardiomyopathy from acute coronary syndrome and guide supportive care, which allows rapid recovery of ventricular function.

Keywords: toxic cardiomyopathy; methadone; cardiotoxicity; troponin; poisoning.

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ALCOHOL-ASSOCIATED AGRANULOCYTOSIS, SEPSIS RISK AND CRITICAL ANEMIA: DIAGNOSTIC CHALLENGES OF INFLAMMATORY MARKERS IN CHRONIC ALCOHOL USE

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Background. Chronic alcohol use suppresses hematopoiesis and neutrophil function, and through gastric mucosal injury, malnutrition and malabsorption promotes vitamin B12, folate and other B-vitamin deficiency. In profound neutropenia, conventional inflammatory indicators become unreliable, complicating early recognition of sepsis.

Case presentation. A 33-year-old man with five months of heavy alcohol use, reduced intake for one month and prior opioid substitution treatment was transferred from an addiction clinic with somnolence, abdominal pain, fever, spontaneous ecchymoses and visual hallucinations. On admission he was jaundiced, tachycardic (110/min) and tachypneic (23/min) with SpO2 91%, yet temperature was only 37.2 °C. Laboratory tests showed WBC 0.95×10^9/L with absolute neutrophil count 0.47×10^9/L, hemoglobin 9.6 g/dL, MCV 108.8 fL, platelets 14×10^9/L, CRP 263 mg/L, total bilirubin 78.6 μmol/L, GGT 993 U/L and respiratory alkalosis (pH 7.53). Imaging revealed hepatomegaly with steatosis, bilateral basal consolidation and colonic wall thickening; head CT excluded an acute intracranial process.

Management and course. Hematology consultation confirmed severe neutropenia, thrombocytopenia and macrocytic anemia. Given the high risk of sepsis, empirical ceftriaxone and vancomycin were started with red cell and platelet transfusions, electrolyte correction, thiamine and intensive monitoring. Neutrophils recovered to 3.25×10^9/L by hospital day 3, and by day 4 WBC was 7.78×10^9/L and platelets 112×10^9/L, while CRP fell from 263 to 34 mg/L by day 8. Lipase peaked at 869 U/L despite unremarkable pancreatic imaging. Hectic fever on days 7–8 prompted blood and stool cultures. The patient improved and was discharged after nine days.

Discussion. Leukocyte count and fever, the usual triggers for sepsis evaluation, were unreliable: leukopenia reflected marrow suppression rather than absence of infection, and fever was blunted.

CRP was the most useful marker, but its specificity was limited by concurrent alcohol-related liver injury, colitis and pancreatic enzyme elevation. Macrocytosis, steatosis and rapid neutrophil recovery favored an alcohol-associated mechanism, likely compounded by nutritional deficiency: alcohol-related gastritis impairs intrinsic factor and B12 absorption, and malabsorption and poor intake deplete folate and other B vitamins (levels not measured). Infection and corticosteroids may also have contributed. Home-produced alcohol adds methanol risk, as folate deficiency slows formate clearance; absent metabolic acidosis argued against significant toxicity.

Conclusion. In chronic alcohol users with agranulocytosis, sepsis should be presumed until excluded. Serial CRP trends, interpreted together with clinical findings, imaging and cultures rather than as isolated values, should guide early empirical therapy, nutritional repletion and supportive care.

Keywords: alcohol; agranulocytosis; sepsis; C-reactive protein; critical anemia.

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CALCIUM CHANNEL BLOCKER POISONING: DIAGNOSTIC AND THERAPEUTIC CHALLENGES IN EMERGENCY MEDICINE

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Background. Calcium channel blocker (CCB) overdose causes refractory vasodilatory shock, hyperglycemia and metabolic acidosis. Unreliable history and resemblance to other emergencies often delay recognition.

Case presentation. A 31-year-old woman was transferred from a regional hospital with suspected acute pancreatitis and hypotension. Initial history suggested accidental ingestion of two amlodipine tablets after alcohol; later, ingestion of a large quantity of amlodipine and an amlodipine-containing combination antihypertensive was disclosed, with suspected intentional overdose. On admission she was alert but pale, with BP 60/36 mmHg and SpO2 89% on room air. Tests showed pH 7.34, base excess –7.2, anion gap 20.4, lactate 3.9 mmol/L, glucose 305 mg/dL, ionized calcium 0.65 mmol/L and creatinine 327.5 μmol/L; lipase (14 U/L), CRP (<5 mg/L) and pancreatic imaging were normal. Ejection fraction was preserved (52–55%).

Management and course. In the ICU, she received crystalloid infusion therapy, norepinephrine, phenylephrine and dobutamine, calcium gluconate, sodium bicarbonate and high-dose insulin euglycemia therapy (1 IU/kg/h) with dextrose and potassium. As shock was vasodilatory rather than cardiogenic, dobutamine was withdrawn and epinephrine added to high-dose norepinephrine. Dialysis was not used (high volume of distribution, protein binding). The course was complicated by capillary leak with generalized edema, pleural effusions up to 700–800 mL (right) and 500–600 mL (left) with respiratory failure requiring non-invasive ventilation and thoracentesis (800 mL), and drug-induced hypoglycemia. Lactate normalized, vasopressors were weaned and creatinine reached 55 μmol/L. Psychiatric evaluation: acute stress reaction, no active suicidal risk. She was discharged on day 9.

Discussion. Recognition was hampered by a minimizing history, a pancreatitis-like presentation (excluded by normal lipase and imaging) and delayed profound vasodilation consistent with amlodipine's prolonged kinetics. Hyperglycemia, reflecting impaired insulin release, and

preserved ejection fraction were key clues that guided early insulin therapy and vasopressor choice. Prolonged vasodilatory shock likely caused functional endothelial glycocalyx disruption and capillary leak, resulting in generalized edema and pleural and peritoneal fluid accumulation that complicated fluid management. Pleural fluid showed no microbial growth, arguing against an infectious effusion. As leukocytosis is common with corticosteroids and in poisoning, CRP (<5 mg/L on admission, 51 mg/L on day 3) and pulmonary infiltrates supported empirical antibacterial therapy for pneumonia.

Conclusion. CCB poisoning should be suspected in unexplained vasodilatory shock with hyperglycemia and preserved ejection fraction, even when the history suggests trivial ingestion. Early high-dose insulin euglycemia therapy, mechanism-based vasopressor selection and vigilance for capillary leak and pleural effusions are essential for a good outcome.

Keywords: calcium channel blockers; amlodipine; vasodilatory shock; high-dose insulin therapy; poisoning.

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METHADONE POISONING IN GEORGIA: NEUROTOXICITY AND CARDIOTOXICITY, CLINICAL FEATURES OF MULTIPLE ORGAN FAILURE

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Background. Methadone toxicity is dominated by respiratory depression, but cardiac, neurological and multiorgan injury are underrecognized, especially with stimulant co-use.

Case presentation. A 19-year-old man was found unconscious at home after reportedly using "crystalline methadone" and mephedrone (dose and timing unknown; no analytical confirmation). On arrival: GCS 3, miosis, respiratory rate 4–5/min, SpO2 80%, BP 85/55 mmHg, heart rate 126/min, temperature 35.6 °C. He was intubated; asystole occurred 9 minutes later, and circulation returned after 10 minutes of resuscitation. ECG showed sinus tachycardia (145/min). Tests showed pH 7.23, lactate 8.3 mmol/L, potassium 6.16 mmol/L, creatinine 208.7 μmol/L, creatine kinase 2250 U/L, AST 666 U/L and ALT 573 U/L. Echocardiography revealed diffuse hypokinesia with ejection fraction (EF) 18%; head CT was normal. Right cheek edema and left forearm hyperemia suggested prolonged-pressure injury.

Management and course. He required maximal doses of norepinephrine, phenylephrine and dobutamine, hydrocortisone, massive infusion therapy, potassium-binding therapy and acidosis correction. Vasopressors were weaned and he was extubated on day 3. Consciousness returned by day 2, with left-sided weakness and agitation, and emotional lability later. EF rose to 27% on day 2 and 55% on day 4; creatinine fell to 89.6 μmol/L by day 3. AST 3049 and ALT 4195 U/L on day 4 declined by day 6; platelets fell to 75×10^9/L before recovering. Dark urine and dense facial and left-arm swelling appeared by day 5. He was discharged on day 7 with residual facial swelling and limited left-arm joint movement.

Discussion. Coma, miosis and respiratory failure reflected opioid toxicity, while tachycardia (partly reflecting vasoactive support) may indicate a sympathomimetic (mephedrone) contribution. Arrest likely resulted from hypoxia, acidosis and hyperkalemia; rapidly reversible myocardial depression (EF 18% on day 1, 55% by day 4) fits toxic and hypoxic-ischemic cardiomyopathy. Organ dysfunction was multifactorial: muscle injury from prolonged

compression, shock and hypoxia likely explain the quickly resolving kidney injury, while the delayed transaminase peak suggests ischemic hepatitis with possible additional toxic injury. Transient left-sided weakness with normal head CT may reflect hypoxic-ischemic or compression injury.

Conclusion. Poisoning with methadone, particularly with stimulant co-use, can cause cardiac arrest, severe reversible myocardial dysfunction and multiorgan failure. Early airway control, serial echocardiography and monitoring of kidney, liver and muscle injury support good recovery.

Keywords: methadone; neurotoxicity; cardiotoxicity; cardiac arrest; multiple organ failure.

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PESTICIDE POISONING: DIAGNOSTIC DIFFICULTIES AND FULMINANT HEPATIC FAILURE

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Background. Poisoning incidents involving highly hazardous pesticides often go undetected in low- and middle-income countries (FAO/WHO, 2016), and nonspecific presentations delay recognition.

Case presentation. A 64-year-old hypertensive man had 3–4 days of fever, myalgia, abdominal pain and distension, and a vesicular rash spreading from the face and mouth to the trunk and limbs. Ten days earlier he had sprayed a poultry house and vineyard with unidentified chemicals. On admission he was alert (BP 180/100 mmHg, SpO2 97%, temperature 37.2 °C) with facial vesicles, violaceous chest macules and a distended, diffusely tender abdomen. Tests showed WBC 17.7×10⁹/L, CRP 11 mg/L, AST 974 U/L, ALT 833 U/L, bilirubin 12.8 μmol/L, INR 1.03, sodium 123 mmol/L, lactate 4.5 mmol/L and pH 7.51. Contrast CT excluded acute surgical pathology and vascular occlusion.

Management and course. He received antibiotics, corticosteroids, oxygen, albumin, fresh frozen plasma and hepatoprotective therapy. By day 2, AST rose to 3274 U/L and ALT to 2459 U/L, with INR 1.6, fibrinogen 0.8 g/L, LDH 8407 U/L, CK 2687 U/L and creatinine 151.7 μmol/L; periorbital edema, petechiae and purpura developed. Hypoxemia (SpO2 78% on room air) persisted despite CPAP; he was intubated on day 3 and developed hemodynamic collapse requiring vasopressors. Asystole occurred and resuscitation failed; death was declared 44 hours after admission.

Discussion. Without toxicology laboratory capacity, as in many resource-limited settings, diagnosis rested on exposure history and clinical picture, and the agent remained unidentified. Patients often cannot name the product, its source or how it was prepared, and label instructions and protective measures are frequently not followed (FAO/WHO, 2016). Progressive hepatocellular necrosis with lactic acidosis, hypoxemia, rhabdomyolysis, kidney injury and

probable DIC after recent spraying is compatible with severe pesticide toxicity, such as phosphine from aluminium phosphide, a highly toxic fumigant without a specific antidote, although the 10-day interval and vesicular rash are atypical. Rash, leukocytosis and abdominal distension suggested dermatologic, infectious or surgical causes, while INR was normal at presentation and CRP modest.

Conclusion. In patients with unexplained rash, abdominal symptoms and rising transaminases after recent pesticide exposure, toxic hepatitis should be considered early even when INR is normal, and exposure details (product, source, preparation, protective measures) should be sought from the patient and relatives. Serial monitoring of INR, fibrinogen, lactate and organ function and early intensive care are needed to recognize fulminant progression.

Keywords: pesticides; poisoning; fulminant hepatic failure; multiple organ failure; diagnosis.

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ALCOHOL-ASSOCIATED ACUTE INTOXICATION AND ALTERED CONSCIOUSNESS: CHALLENGES OF DIFFERENTIAL DIAGNOSIS IN EMERGENCY TOXICOLOGY

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Background. Alcohol-associated intoxication is among the most frequent emergency toxicology presentations, and altered consciousness in these patients is often attributed to ethanol alone. This anchoring may delay recognition of alcoholic ketoacidosis, lactic acidosis, toxic alcohol poisoning, hypoglycemia, sepsis or acute kidney injury.

Case. A 59-year-old man with hypertension and about nine months of regular alcohol use, with markedly reduced food intake during the preceding month, was brought by ambulance with abdominal pain and distension, dyspnea, dizziness and vomiting after recent drinking. He was drowsy but in adequate contact, with fine horizontal nystagmus, tachycardia, tachypnea, SpO2 93–96% and a distended, diffusely tender abdomen. Blood gas analysis showed severe metabolic acidosis (pH 6.95, pCO2 14.2 mmHg, actual bicarbonate 3.0 mmol/L [standard 6.1], base excess –29.2) with an analyzer-calculated anion gap of 47.8 mmol/L, lactate 29.8 mmol/L (reference 0.9–1.7) and glucose 49 mg/dL. Other findings were macrocytosis (MCV 114 fL), thrombocytopenia, leukocytosis, hyperbilirubinemia (101 μmol/L), AST 320 U/L, GGT 715 U/L, creatinine 162 μmol/L and ketonuria. Contrast-enhanced abdominal CT excluded mesenteric vascular occlusion and perforation, and showed cirrhotic liver configuration, ascites, bilateral basal pulmonary infiltrates and delayed renal contrast excretion.

Course. Toxicology assessment favored alcoholic ketoacidosis with dehydration and malnutrition, and infusion therapy, glucose correction and supportive treatment were started. Acidosis improved only partially (pH 7.22), and the anion gap remained 44–46. Oliguria developed during fluid resuscitation, followed by coma (GCS 7–8), bradypnea, hypoxemia and hypotension (75/45 mmHg), requiring intubation, mechanical ventilation and vasopressors. Asystole occurred about 22 hours after admission, and resuscitation was unsuccessful. Final diagnosis: toxic effect of ethanol (T51.0) complicated by alcoholic liver failure, acidosis, renal failure, pneumonia and respiratory failure.

Conclusions. In patients with alcohol use, profound high-anion-gap acidosis with impaired consciousness requires structured differential diagnosis rather than attribution to ethanol. A gap that persists despite treatment should prompt early measurement of serum ethanol, β-hydroxybutyrate, osmolar gap and toxic alcohols, and assessment for sepsis, hepatic and renal failure and thiamine deficiency, alongside early intensive care involvement. Case-based reasoning of this kind is a valuable educational strategy in emergency toxicology training.
Keywords: ethanol; ketoacidosis; anion gap; consciousness; toxicology.

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TOXIC PANCREATITIS AND HEPATOTOXICITY: PATHOGENETIC LINKS BETWEEN ORGAN INJURIES

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Background. Ethanol can injure the pancreas and liver through overlapping mechanisms, including oxidative and non-oxidative metabolism and cytokine-mediated inflammation, yet the organs are often assessed separately. We describe a case in which pancreatitis and hepatic involvement after heavy alcohol intake were detected by routine testing before typical pancreatic complaints developed.

Case. A 46-year-old man with hypertension, coronary artery disease after bypass grafting, peptic ulcer disease and reported hepatitis C (anti-HCV rapid test negative), drinking alcohol daily for one year, presented after two days of severe weakness, dizziness, vomiting, black stools, epistaxis and intermittent disorientation following excessive alcohol intake, mainly spirit; he reported hallucinations. Hemodynamic and respiratory parameters were stable, with hepatomegaly and a soft, painless abdomen. Endoscopy excluded gastroduodenal bleeding despite tarry stool and a blood-stained nasogastric aspirate. Because of the high risk of seizures, encephalopathy and hepatorenal syndrome, he was admitted to toxicology intensive care, adynamic and drowsy, with mild right hypochondrial and epigastric tenderness and fever (38.5 °C). Pancreatic amylase 391 U/L (reference 13–53) and lipase 2287 U/L (13–60) were measured routinely in view of these risks, with CRP 100 mg/L, AST 100 U/L, GGT 132 U/L and platelets 97 $\times 10^9$/L. Ultrasound showed hepatomegaly with increased echogenicity and biliary sludge; CT showed hepatic steatosis and no pancreatic lesions or peripancreatic changes.

Course. Alcohol-induced acute pancreatitis (K85.2) was diagnosed from lipase about 38 times the upper reference limit, before typical pancreatic complaints appeared. Subsequently, severe girdle-like abdominal pain with distension and radiation to the back developed, and he was transferred to the surgical department. Infusion, analgesic, gastroprotective and symptomatic therapy was continued. Fever resolved, lipase fell to 682 and then 155 U/L, CRP to 38.4 mg/L, and platelets

rose to 234 $\times 10^9$/L. He was discharged after seven days in satisfactory condition with advice on abstinence, diet and gastroenterology follow-up. Additional diagnoses: T51.9 and toxic encephalopathy (G92).

Conclusions. Marked lipase elevation with AST-predominant transaminase rise, raised GGT, hepatomegaly and steatosis after heavy alcohol intake is compatible with combined pancreatic and hepatic toxic injury through shared mechanisms, although a single case cannot establish causation. Pancreatitis was detected by routine enzyme testing before girdle-like pain and distension appeared, in a patient with altered perception; pancreatic enzymes and liver tests should therefore be routine on the basis of the alcohol history, alongside neurological assessment and abstinence counseling.

Keywords: pancreatitis; hepatotoxicity; ethanol; lipase; toxicology.

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Management of Post-Cesarean Section Sepsis

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Post-Cesarean section sepsis is a potentially life-threatening complication associated with significant maternal morbidity and mortality. Surgical site infections, postpartum endometritis, pelvic abscesses, and other infectious complications may lead to rapid clinical deterioration and multiple organ dysfunction. Early recognition and prompt, evidence-based management are essential to improving maternal outcomes. To review the key principles of diagnosis and management of post-Cesarean section sepsis, with emphasis on early recognition, antimicrobial therapy, hemodynamic stabilization, and source control. A narrative review of current clinical recommendations and evidence-based approaches to maternal sepsis management was conducted, focusing on postpartum infections following Cesarean delivery. Effective management requires a multidisciplinary approach involving obstetricians, intensivists, anesthesiologists, microbiologists, and surgical specialists. Initial management includes rapid clinical assessment, hemodynamic monitoring, laboratory investigations, measurement of serum lactate, and collection of appropriate microbiological specimens without delaying treatment. Prompt administration of broad-spectrum intravenous antibiotics is essential when sepsis or septic shock is suspected. Fluid resuscitation should be individualized according to hemodynamic status and response to treatment, while vasopressor support, preferably with norepinephrine, may be required in persistent septic shock. Identification and timely control of the infectious source, including drainage of abscesses, debridement of infected tissues, or further surgical intervention when indicated, are critical components of treatment. Subsequent antimicrobial therapy should be guided by microbiological results, clinical response, and local resistance patterns.

Post-Cesarean section sepsis requires urgent recognition and coordinated multidisciplinary management. Early antimicrobial therapy, appropriate resuscitation, timely source control, and continuous reassessment of organ function are fundamental to reducing the risk of severe maternal complications and improving clinical outcomes. Standardized sepsis pathways and

effective communication among healthcare professionals may further strengthen the quality and safety of postpartum care.

Keywords: Post-Cesarean section sepsis; maternal sepsis; postpartum infection; septic shock; antimicrobial therapy; early recognition, timely intervention, source control; critical care.

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ACUTE MANAGEMENT OF PROLONGED FEBRILE SEIZURES IN CHILDREN

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Background:

Febrile seizures are among the most common neurologic events in early childhood and are usually brief and self-limited. When convulsive activity persists, however, management must shift rapidly from observation to active intervention. Although prolonged febrile seizures are traditionally classified as complex when lasting 15 minutes or longer, an ongoing convulsive seizure at five minutes warrants emergency treatment as convulsive status epilepticus. Acute assessment must also consider alternative causes of seizure with fever, including central nervous system infection and metabolic abnormalities.

Educational Objective:

To provide pediatric and emergency clinicians with a concise, evidence-based cognitive framework for time-sensitive decision-making in children with suspected prolonged febrile seizures, emphasizing recognition of the five-minute treatment threshold, stabilization, selection of rescue-medication route, reassessment, escalation, and etiologic evaluation.

Educational Strategy:

Current evidence-based recommendations and national protocol guidance were synthesized into five sequential acute-management decisions: **recognize, stabilize, treat, reassess, and escalate,** while etiologic evaluation proceeds in parallel. Recognition identifies ongoing convulsive activity requiring emergency treatment while distinguishing it from a self-limited event. Stabilization prioritizes airway, breathing, circulation, cardiorespiratory monitoring, and rapid identification of reversible abnormalities such as hypoglycemia. At five minutes of persistent convulsive activity, a benzodiazepine should be administered promptly. When intravenous access is unavailable or would delay treatment, an appropriate non-intravenous rescue route, including intranasal, buccal, or intramuscular midazolam or rectal diazepam, should be used according to

local protocols. Persistent seizure activity after adequate first-line therapy requires immediate reassessment and timely progression to second-line antiseizure treatment. Etiologic evaluation occurs concurrently and is guided by clinical features such as focal neurologic findings, persistent altered consciousness, suspected metabolic disturbance, or signs of central nervous system infection. The framework is designed as a practical cognitive aid for bedside teaching and emergency decision-making.

Conclusion:

Prolonged febrile seizures require structured, time-sensitive management. A five-decision framework combined with parallel etiologic evaluation may help clinicians recognize the treatment threshold, minimize avoidable treatment delays, select an appropriate rescue-medication route, and escalate therapy safely when seizure activity persists.

Keywords: febrile seizures; status epilepticus; paediatric emergency; benzodiazepines; medical education

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HYPEROXIA IN PEDIATRIC CRITICAL CARE

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Background: Supplemental oxygen is a lifesaving and critical intervention in pediatric emergency and intensive care. However, excessive or inappropriate administration can induce hyperoxia and hyperoxemia. This overexposure triggers the overproduction of reactive oxygen species (ROS), causing severe oxygen toxicity and direct parenchymal lung injury. Pediatric patients requiring mechanical ventilation with a fraction of inspired oxygen (FiO_2) greater than 0.60 for prolonged durations (exceeding 24 hours) face the highest clinical risk. Furthermore, this risk is significantly exacerbated by prior exposure to certain sensitizing drugs or radiation.

Objectives: This study/review aims to evaluate the clinical impact and mechanisms of oxygen toxicity in pediatric populations, identify critical risk factors, and outline effective monitoring strategies to optimize safe oxygen delivery.

Methods: A comprehensive literature review and clinical analysis were conducted, examining the pathophysiology of hyperoxia-induced cellular damage. The analysis focused on the duration of exposure, target arterial oxygen tension (PaO_2), and the susceptibility of lung parenchyma to oxidative stress, particularly in patients undergoing mechanical ventilation.

Results: The evidence demonstrates that hyperoxia produces direct cellular injury through increased production of reactive oxygen intermediates (ROIs). Prolonged exposure to FiO_2>0.60 for over 24 hours is strongly associated with cellular and tissue damage. Additionally, certain medications (such as bleomycin and amiodarone) or radiation exposure sensitize the lungs, causing toxicity to occur at much lower FiO_2 levels.

Conclusions: Oxygen toxicity remains a significant but highly preventable complication in pediatric critical care. Standardized titration protocols and careful monitoring of oxygen saturation are crucial to prevent oxidative damage. When clinically indicated, oxygen must not be withheld, but its delivery should be strictly optimized to safeguard vulnerable patients.

Keywords: Oxygen toxicity, Hyperoxia, Pediatric intensive care, Reactive oxygen species, Mechanical ventilation.

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LONGITUDINAL CLINICAL AND LABORATORY PATTERNS OF CORTICO-METABOLIC DYSREGULATION IN CRITICALLY ILL PATIENTS WITH SEPSIS AND SEPTIC SHOCK

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Background: Sepsis and septic shock are accompanied by profound inflammatory, neuroendocrine, hemodynamic, and metabolic alterations. Changes in hypothalamic–pituitary–adrenal signaling, corticosteroid availability, catecholamine activity, glucose metabolism, cellular energetics, and electrolyte homeostasis may contribute to heterogeneous patterns of systemic stress adaptation. Direct endocrine phenotyping is rarely available in routine intensive care; therefore, longitudinal clinical and laboratory trajectories may provide complementary information on cortico-metabolic dysregulation.

Objective: To characterize longitudinal clinical and laboratory patterns associated with cortico-metabolic dysregulation in critically ill patients with sepsis and septic shock.

Methods: A retrospective, de-identified longitudinal case-series analysis was performed using adult intensive care records from a tertiary hospital. Eighteen unique records were screened; 16 patients with explicitly documented sepsis (A41.9) and/or septic shock (R57.2) were included in the primary analysis. Serial blood-gas parameters, glucose, lactate, sodium, potassium, ionized calcium, chloride, renal and inflammatory markers, hemodynamic status, respiratory failure, and organ-support requirements were reviewed. Routine laboratory variables were interpreted as components of an integrated systemic stress phenotype rather than specific diagnostic markers of adrenal dysfunction.

Results: Median age was 65 years (range 23–76). Shock was documented in 13/16 patients (81.3%), including explicitly coded septic shock in 6/16 (37.5%). Acute respiratory failure occurred in all 16 patients, and cardiac arrest was documented in 11/16 (68.8%). Among available serial measurements, pH ranged from 6.925 to 7.773, glucose from 52 to 661 mg/dL, lactate from 0.77

to 15.27 mmol/L, potassium from 2.38 to 6.58 mmol/L, and ionized calcium from 0.45 to 1.11 mmol/L. Marked inter- and intra-patient heterogeneity was evident. Some patients developed profound hyperglycemic, hyperlactatemic acidosis with major electrolyte abnormalities, whereas others experienced severe clinical deterioration despite only modest lactate elevation. Recurrent mixed acid–base disturbances, dysglycemia, hypokalemia, hyperkalemia, and hypocalcemia demonstrated rapid temporal variability during critical illness.

Conclusion: Sepsis and septic shock were associated with highly heterogeneous longitudinal metabolic and homeostatic trajectories. Integrated interpretation of glucose, lactate, acid–base status, electrolytes, renal function, inflammation, and hemodynamic changes may better characterize systemic stress dysregulation than isolated laboratory measurements. These patterns should not be considered diagnostic of adrenal dysfunction, but they provide a rationale for prospective studies combining routine ICU trajectories with direct cortisol, ACTH, corticosteroid-binding globulin, and free-cortisol assessment.

Keywords: Sepsis; septic shock; stress hyperglycemia; lactate; electrolyte disturbances.

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BEFORE THE FIRST ATTEMPT: THE IMPORTANCE OF A CHECKLIST FOR INTUBATION IN CRITICALLY ILL PATIENTS

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Tracheal intubation in critically ill adults carries a risk of hypoxaemia and haemodynamic deterioration. Even technically successful intubation may be accompanied by severe physiological instability. Safe airway management therefore requires preparation, assessment of both anatomical and physiological risks, and coordinated teamwork.

This presentation describes a case-based educational strategy using a Georgian translation of the preintubation checklist developed by the Difficult Airway Society, Intensive Care Society, Faculty of Intensive Care Medicine, and Royal College of Anaesthetists (DAS/ICS/FICM/RCoA). Its aim is to demonstrate how the checklist can structure clinical decision-making and team communication before the first intubation attempt.

The educational approach follows the checklist's four domains: preparation of the patient, preparation of equipment, preparation of the team, and preparation for difficulty. A clinical scenario is used to discuss preoxygenation, cardiovascular optimisation, induction tailored to the patient's physiology, and postintubation management. Checklist items are linked to relevant evidence from clinical guidelines and studies, with emphasis on role allocation and a shared plan for difficult or failed intubation.

The checklist is presented as a practical framework for identifying potential omissions, establishing a shared airway plan, and preparing for complications. Its central educational message is that maintaining oxygenation and perfusion throughout airway management is essential, alongside successful placement of the tracheal tube. The presentation proposes a structured approach to teaching preparation for intubation in critically ill adults.

Keywords: Intubation; Checklist; Oxygenation; Teamwork; Education.

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MANAGEMENT OF SEVERE ACUTE KIDNEY INJURY IN CRITICALLY ILL PATIENTS WITH FLUID OVERLOAD

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Background: Acute kidney injury (AKI) is characterized by an abrupt decline in kidney function occurring within 7 days. It is manifested by an increase in serum creatinine (SCr) from baseline and/or a reduction in urine output. The pathophysiology of AKI involves multiple overlapping mechanisms, including a reduction in the glomerular filtration rate (eGFR) caused by systemic or local hemodynamic disturbances, which may be accompanied by reversible tubular injury, as well as more severe tubular necrosis caused by inflammatory, ischemic, and nephrotoxic factors. Sepsis may represent an important risk factor for AKI in the intensive care unit (ICU).

Aim: The aim of this review is to summarize the current evidence on the pathophysiology, risk factors, staging, and management of severe AKI in critically ill patients with fluid overload, with particular emphasis on fluid management and kidney replacement therapy (KRT).

Methods: A literature review was conducted using PubMed/MEDLINE, KDIGO Clinical Practice Guidelines, OpenEvidence and other relevant databases, focusing on relevant studies, systematic reviews, and international guidelines addressing AKI, fluid overload, and kidney replacement therapy (KRT) in critically ill patients. Priority was given to the most recent evidence and recommendations from current clinical practice guidelines.

Results: Risk factors for AKI in critically ill patients include both modifiable and non-modifiable factors and often act concurrently. Validated risk prediction models incorporating baseline creatinine levels, APACHE II/SOFA severity scores, the presence of sepsis, and exposure to nephrotoxic drugs can be used to estimate an individual's risk of AKI and identify patients requiring more intensive monitoring. The management of AKI in the ICU is based on KDIGO staging and primarily includes early identification and correction of reversible causes, hemodynamic optimization, avoidance or minimization of nephrotoxic medications, and careful assessment of fluid balance. In cases of severe or persistent fluid overload, particularly when accompanied by life-threatening electrolyte, acid–base, or metabolic disturbances, timely consideration of KRT initiation represents an important component of management.

Conclusion: Severe AKI in critically ill patients with fluid overload requires early recognition and

an individualized, structured management strategy. Management should be based on hemodynamic optimization, prevention of further kidney injury, and careful management of fluid balance, while the decision to initiate KRT should be guided by the patient's clinical condition and the severity of fluid and metabolic disturbances. Further research is needed to determine optimal patient selection, fluid management strategies, and the optimal timing and modality of KRT.
Keywords: Acute kidney injury (AKI); Critically ill patients; Hemodynamic optimization; Fluid management; Sepsis.

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ANTIBIOTIC THERAPY-ASSOCIATED RISKS IN CRITICALLY ILL PATIENTS

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Antibacterial therapy is a cornerstone of treatment in critically ill patients, particularly in sepsis and septic shock, where timely administration of effective antibiotics is essential for improving outcomes. However, increasing antimicrobial resistance, widespread use of broad-spectrum agents, and the complexity of intensive care populations have shifted the therapeutic challenge from simply selecting an active antibiotic toward achieving adequate antimicrobial exposure while minimizing toxicity, resistance, and ecological harm.

Critically ill patients are especially vulnerable to antibiotic-associated complications, including nephrotoxicity, hepatotoxicity, neurotoxicity, hematological adverse effects, *Clostridioides difficile* infection, clinically significant drug–drug interactions, selection of multidrug-resistant organisms, and disruption of the intestinal microbiome. These risks may be further increased by polypharmacy, prolonged antibiotic exposure, combination therapy, advanced age, and pre-existing organ dysfunction.

An important challenge is the profound and dynamic pharmacokinetic variability associated with critical illness. Capillary leak, fluid resuscitation, altered volume of distribution, hypoalbuminemia, augmented renal clearance, acute kidney injury, hepatic dysfunction, and extracorporeal organ support, including continuous renal replacement therapy (CRRT) and extracorporeal membrane oxygenation (ECMO), may substantially modify antibiotic exposure. Consequently, conventional dosing may result in either subtherapeutic concentrations, increasing the risk of treatment failure and resistance, or excessive exposure associated with toxicity.

Recent developments increasingly support a transition toward precision antimicrobial therapy. PK/PD-guided dose optimization, therapeutic drug monitoring (TDM), and model-informed precision dosing provide opportunities to individualize therapy according to rapidly changing patient characteristics. Beyond established monitoring of vancomycin and aminoglycosides, β-lactam TDM is receiving increasing attention in selected critically ill patients. Extended or

continuous β-lactam infusion may also improve PK/PD target attainment in patients with altered pharmacokinetics or less susceptible pathogens.

Modern antimicrobial stewardship is increasingly supported by rapid molecular diagnostics, earlier pathogen identification, susceptibility-guided therapy, biomarker-assisted reassessment, early de-escalation, and optimization of treatment duration. Emerging approaches integrating real-time TDM, population PK models, Bayesian forecasting, rapid diagnostics, and clinical decision-support technologies may further enable adaptive antibiotic dosing.

Thus, contemporary ICU antibiotic management should move beyond choosing the “right antibiotic” toward delivering the right drug, at the right dose and exposure, at the right time, for the right duration, with continuous reassessment of efficacy, toxicity, resistance, and ecological impact.

Keywords: critically ill patients, antibiotic therapy, antimicrobial resistance, precision dosing, antimicrobial stewardship.

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KEY ISSUES AND CHALLENGES IN RATIONAL ANTIBIOTIC THERAPY

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Sepsis and septic shock are life-threatening conditions in which the timely initiation of appropriate antimicrobial therapy is a critical component of effective management. At the same time, the rational selection of empirical antibiotic therapy remains a complex clinical challenge, requiring a careful balance between providing sufficiently broad initial antimicrobial coverage and minimizing the risks associated with unnecessary antibiotic exposure, drug-related toxicity, and the emergence of antimicrobial resistance.

The selection of rational empirical antibiotic therapy should consider the suspected source of infection, likely causative pathogens, local antimicrobial resistance patterns, previous antibiotic exposure, and individual risk factors for infection with multidrug-resistant organisms. Particular importance should be given to the timely collection of appropriate microbiological samples, the use of rapid diagnostic methods where available, and early reassessment of antimicrobial therapy based on microbiological and clinical findings.

Significant pharmacokinetic and pharmacodynamic alterations in critically ill patients further complicate optimal antibiotic dosing. Fluid shifts, hypoalbuminemia, impaired or augmented renal clearance, hepatic dysfunction, and the use of organ replacement therapies may substantially alter antibiotic exposure. Therefore, effective antimicrobial therapy requires individualized dosing based on PK/PD principles and, when appropriate, the use of therapeutic drug monitoring.

An essential component of rational antimicrobial management is the systematic reassessment of empirical therapy according to clinical, microbiological, and laboratory findings, followed by de-escalation, transition to targeted therapy, optimization of treatment duration, or discontinuation of antibiotics when continued therapy is no longer indicated.

Thus, contemporary empirical antibiotic therapy for sepsis should be guided not only by the principle of early treatment initiation but also by the concept of providing the right antibiotic, to the right patient, at the right dose, at the right time, and for the appropriate duration. Integrating these principles with antimicrobial stewardship represents an important strategy for improving

treatment efficacy and safety while limiting the development and spread of antimicrobial resistance.

Keywords: sepsis, septic shock, empirical antibiotic therapy, antimicrobial resistance, pharmacokinetics/pharmacodynamics, de-escalation, therapeutic drug monitoring, antimicrobial stewardship.

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RHEUMATOLOGICAL DISEASES AS A CAUSE OF EMERGENCY HOSPITALIZATIONS: ANALYSIS OF BAU HOSPITAL EXPERIENCE

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ICU admissions among the patients with respiratory diseases are of considerable clinical importance worldwide, because of the severity of these conditions. Although pulmonary emergencies associated with systemic autoimmune rheumatic diseases (SARDs) are relatively uncommon in general emergency settings, they are associated with high mortality rates and frequently mimic more common critical conditions, such as sepsis or pneumonia. They may manifest with the features of ARDS (diffuse alveolar hemorrhage, acute lupus pneumonitis, antisynthetase syndrome and anti-MDA5 antibody-associated diseases), sometimes even in the absence of overt systemic autoimmune manifestations. Another important challenge is the immunocompromised status of patients with longstanding SARDs, many of whom require prolonged treatment with glucocorticoids and immunosuppressive agents and increased risk of Pneumocystis jirovecii pneumonia, which may also present with bilateral pulmonary infiltrates. Early identification of this infection using appropriate diagnostic methods, including polymerase chain reaction testing of respiratory specimens or bronchoalveolar lavage, followed by prompt initiation of pathogen-specific treatment, is essential to avoid inappropriate escalation of glucocorticoid therapy.

Diagnostic challenges may also arise in patients presenting with severe bilateral cavitating pulmonary lesions, which may reflect not only primary pulmonary infection but also pulmonary involvement associated with newly diagnosed granulomatosis with polyangiitis. In rare cases, respiratory emergencies in patients with SARDs may be associated with biological or targeted synthetic disease-modifying antirheumatic drugs (DMARDs), including adalimumab, rituximab,

tocilizumab, and other agents. Other potential causes of ICU admission include spontaneous pneumothorax, potentially reversible shrinking lung syndrome, severe progressive respiratory muscle weakness and wasting associated with inflammatory myopathies. Overall, hospital-based studies suggest that SARD-related pulmonary emergencies are relatively uncommon but potentially life-threatening conditions requiring early recognition, accurate diagnosis, and disease-specific treatment. In our study, we present the analysis of ICU admissions due to the pulmonary and SARD-related emergencies and discuss some clinical cases. As the uncontrolled flares, especially in patients with systemic vasculitides, are described as considerable factors of mortality risk, we would also share our proposals concerning the use of cloud-based ePROM system for remote monitoring of patients' condition, which is especially important in in geographically remote and difficult-to-access mountainous areas of Adjara.

Keywords: pulmonary emergencies, rheumatology, retrospective hospital-based study, eProm in patients monitoring

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ONCOLOGY & EMERGENCY MEDICINE - WHEN TIME DETERMINES OUTCOME

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In our daily practice, we encounter situations when an oncology patient presents to a physician of another specialty, which may cause some tension and additional caution, as the management of such patients is often considered more complex. It is commonly believed that a clinical oncologist should be involved from the very beginning. However, in some acute situations, there is no time for delay, and the patient requires prompt and appropriate medical care.

The aim of this discussion is to demonstrate the importance of timely recognition and initial management of emergency conditions in oncology patients, particularly for specialists in emergency medicine. Emergency medicine and oncology are closely connected, and effective collaboration between specialists is important for appropriate patient management and clinical outcomes.

We will present several clinical cases from our practice and discuss the main issues that are important for emergency medicine specialists to recognize. The focus will be on situations in which the emergency physician needs to make an initial decision and provide urgent medical intervention before the oncology team is involved, as well as cases requiring immediate involvement of the appropriate specialist.

Oncological emergencies are diverse. The clinical cases presented include tumor-induced brain compression, bowel obstruction, and cardiac tamponade. Each case will be discussed in terms of clinical presentation, early warning signs, initial evaluation, emergency intervention, and the timely involvement of relevant specialists.

Particular attention will be given to the role of the emergency physician during the initial phase: rapid evaluation of the patient's condition, recognition of life-threatening situations, hemodynamic and respiratory stabilization, and prompt decision-making, as any delay may lead to further clinical deterioration.

Learning from real clinical cases helps physicians connect theoretical knowledge with practical situations. This discussion aims to help physicians from different specialties better recognize the main clinical features of oncological emergencies, establish priorities for initial management, and ensure timely involvement of the appropriate specialists, including an oncologist, surgeon, neurosurgeon, or cardiologist.

The management of an oncology patient should not be considered the responsibility of the oncology team alone. The cases discussed demonstrate that early recognition, accurate initial evaluation, and timely intervention are essential. Effective collaboration between emergency medicine and oncology teams plays an important role in this process.

Keywords: Oncological emergencies; Emergency management; Clinical decision-making; Specialist collaboration.

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FINGER PARTIAL AMPUTATIONS: RECONSTRUCTION OF DEFECTS

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Introduction
Finger amputations are among the most common injuries of the upper extremity, resulting in significant functional, aesthetic, and psychological impairment. The primary goals of treatment are to restore hand function, preserve digit length, achieve durable soft-tissue coverage, and optimize cosmetic outcomes.

Objective
To review contemporary reconstructive strategies for the management of finger amputation defects.

Methods
A review of current reconstructive options was performed, including primary closure, skin grafting, local and regional flap reconstruction, free tissue transfer, and microsurgical replantation. Patient characteristics, defect size and location, mechanism of injury, and functional requirements were considered during treatment planning.

Results
Reconstruction of finger defects requires an individualized approach. Small defects can often be treated with local tissue rearrangement, whereas larger or more complex defects may require flap coverage or advanced microsurgical techniques. The selection of the reconstructive method depends on the extent of tissue loss, patient needs, and the desired functional outcome.

Conclusion
Successful management of finger amputation defects depends on careful assessment of the injury and patient-specific factors. Modern reconstructive techniques provide reliable options for restoring both function and appearance, with microsurgical reconstruction playing an increasingly important role in the treatment of complex defects. Early intervention and a multidisciplinary approach contribute significantly to optimal clinical outcomes.

Keywords: Finger amputation, reconstruction, soft-tissue defects, flap surgery,

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THE IMPORTANCE OF QUALITY-OF-LIFE ASSESSMENT IN THE CARE AND MANAGEMENT OF HEMODIALYSIS PATIENTS

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Introduction: Hemodialysis is a vital treatment for patients with stage 5 chronic kidney disease. However, it requires long-term treatment and can substantially affect daily life. Treatment outcomes have traditionally been assessed mainly through clinical and laboratory measures, such as dialysis adequacy and hemoglobin and electrolyte levels. Health-related quality of life (HRQoL) is also an important measure of treatment outcomes.

Aim: To examine the importance of quality-of-life assessment in the care and management of patients receiving hemodialysis.

Methods: The scientific literature on quality-of-life assessment in hemodialysis patients was reviewed. The Missoula-VITAS Quality of Life Index (MVQOLI), which assesses five domains—symptoms, functional status, interpersonal relationships, well-being, and transcendence—is described. Other commonly used instruments, including the SF-36 and KDQOL-SF, are also considered, together with demographic, clinical, and psychosocial factors associated with patients' quality of life.

Results: The literature indicates that quality of life is often reduced among patients receiving hemodialysis, particularly in physical functioning, vitality, and emotional well-being. Factors associated with quality of life include age, comorbidities such as diabetes and cardiovascular disease; anemia; nutritional status; chronic pain and pruritus; sleep disturbances; depression and anxiety; social support; employment opportunities; and the day-to-day restrictions associated with dialysis. Poorer quality of life may be associated with a higher risk of hospitalization and mortality, as well as difficulties following the prescribed treatment regimen.

Conclusion: Regular assessment of quality of life can identify problems that may not be apparent from clinical and laboratory measures alone. It can support individualized care, the early recognition of psychosocial difficulties, and patients' active participation in decision-making. Quality-of-life assessment should therefore be part of quality management in hemodialysis services and guide the multidisciplinary team in planning patient care, including nephrologists, nurses, psychologists, nutritionists, and other specialists.

Keywords: hemodialysis, quality of life, chronic kidney disease, MVQOLI, patient-centered care

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THE DAMAGING EFFECTS OF NUCLEAR WEAPONS ON THE HUMAN BODY

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Nuclear explosions differ fundamentally from conventional blasts due to simultaneous mechanical, thermal, and radiological mechanisms acting across multiple time scales. Nuclear weapons are broadly classified as operational-tactical (≤100 kilotons) and strategic (>100 kilotons). Their medical consequences evolve chronologically, from immediate trauma to long-term stochastic effects.

Immediate Effects (Seconds to Minutes) Detonation produces an expanding fireball with extreme temperatures, generating both thermal radiation and a powerful shock wave. The initial threats are unsurvivable at close range, combining burns, blast trauma, and prompt ionizing radiation. Thermal radiation causes flash burns, ignition of clothing, ocular injury, and widespread urban fires. The blast wave inflicts primary injuries to air-filled organs (lungs, middle ear, gastrointestinal tract) and secondary trauma from debris and body displacement. Prompt gamma and neutron radiation exposure may be clinically silent but can initiate acute radiation syndrome (ARS).

Acute Radiation Syndrome (Hours to Weeks) ARS progresses through prodromal, latent, and manifest illness phases. Early symptoms include nausea, vomiting, and fatigue, with severity correlating to dose. Hematopoietic syndrome arises at moderate doses, leading to lymphopenia, neutropenia, thrombocytopenia, and pancytopenia, with fatal risks from infection and hemorrhage. Higher doses damage gastrointestinal epithelium, producing profuse diarrhea, bleeding, sepsis, and electrolyte imbalance. Cutaneous radiation injury evolves over time, ranging from erythema to necrosis. At extreme doses, neurovascular syndrome manifests with seizures, cardiovascular collapse, and rapid death.

Residual Radiation and Fallout (Days to Months) Surface bursts generate radioactive fallout, causing external gamma exposure and internal contamination via inhalation, ingestion, or wounds. Survivors of the initial blast may later succumb to radiation from environmental contamination. Combined injuries—trauma, burns, irradiation, and psychological stress—complicate prognosis and management.

Long-Term Consequences (Years to Decades) Survivors face elevated risks of leukemia, solid cancers, cataracts, and cardiovascular disease. Evidence from Hiroshima and Nagasaki survivors,

extensively studied by the Radiation Effects Research Foundation, remains the cornerstone for understanding stochastic radiation effects. UNSCEAR continues to refine risk assessments based on these data.

Conclusion A nuclear detonation should be conceptualized as a time-dependent sequence of injuries: immediate blast and thermal trauma, acute radiation effects, fallout exposure, and delayed malignancies. Clinical management must recognize that the dominant mechanism of injury shifts over time, from seconds to decades, underscoring the complexity of nuclear mass-casualty medicine.

Keywords: nuclear weapons, radiation injury, blast trauma, fallout, acute radiation syndrome

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IMMUNOLOGICAL STATE OF ORGANISM WITH ACUTE ISHEMIC HEART DISEASE

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Development of myocardial infarction(MI) evolves sensitization of lymphocytes towards myocardial antigen and formation of antibodies against tropomyosin and actin. MI induces infiltration of immune cells even in remote non-infarcted myocardium. The autoimmune mechanism plays an important role in ventricular remodeling after MI.

We aimed to compare immunocompetent cell activity in patients with MI, unstable angina(UA) and chronic coronary disease(CCD). Macrophage – lymphocyte interaction plays an essential role both in cell-mediated and antibody-mediated immune reactions.

We investigated activity of immunocompetent cells according to macrophage-lymphocyte rosette (MLRos) formation in patient's blood leukocyte cultures. Our previous studies showed that amount of MLRos increases in cases of allergy and autoimmune diseases revealing the presence of any type of immune conflict in organism and decreases in cases of acute viral hepatitis and sepsis reflecting a low immune reactivity of organism (Shvelidze T., Saralidze T., Saralidze N.). We studied 15 patients with ST-elevation MI who did not undergo reperfusion therapy because of different reasons twice: after 24 hours and after 10 days of MI onset, 15 patients with unstable angina (UA), 10 with past STEMI, 8 patients with stable angina of exertion(SA).

MLRos in vitro was increased in patients with STEMI. In the acute stage, after 24 hours it was 46,3±1,4% and after 10 days it reached 59,1±3,9% (as in immune-sensitized patients), while in healthy donors it is 37,4±2,2%. In cases of UA the amount of MLRos was in the normal range 33,2±11,2%. It also increased in patients with past STEMI (even 1-3 years after MI) - 58,0±6,5%. In patients with SA it remained in normal range. Increase of MLRos after STEMI, especially after 10 days underlines increased activity of monocytes and lymphocytes, and therefore immune reactivity of organism which is caused by contact of cardiac antigens with immunocompetent cells and immune sensitization, that remains during years after MI. On the contrary, the normal range of MLRos in patients with UA and SA points that immune sensitization to cardiac antigens didn't occur.

Results of our study shows that immune sensitization to myocardial antigen is characteristic of myocardial infarction rather than ischemia without necrosis. Persistent immune activation after STEMI may contribute to post-infarction ventricular remodeling and heart failure. Therefore regulation of immune function can be considered as a new target in the treatment of MI. It's reasonable to use the method of MLRos formation in vitro for estimation of organism's immune reactivity in patients with IM in a dynamic way to improve long-term outcomes.

Keywords: myocardial infarction, angina, macrophage-lymphocyte rosettes

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. BEYOND TROPONIN: RETHINKING ACUTE MYOCARDIAL INFARCTION IN THE EMERGENCY DEPARTMENT

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Background: High-sensitivity cardiac troponin (hs-cTn) has transformed the evaluation of patients with suspected acute myocardial infarction (MI) in the emergency department (ED). However, increased sensitivity has also increased recognition of myocardial injury unrelated to acute myocardial ischemia. The 2026 Fifth Universal Definition of Myocardial Infarction (UDMI) addresses this diagnostic challenge by emphasizing integration of biomarkers with clinical presentation, electrocardiography (ECG), and cardiovascular imaging, rather than interpretation of troponin elevation in isolation.

Objective: To review the major changes introduced by the Fifth UDMI and translate them into a clinically applicable framework for the assessment of suspected acute MI in the ED.

Discussion: The Fifth UDMI defines acute myocardial injury as a rise and/or fall in cardiac troponin I or T with at least one value exceeding the sex-specific 99th percentile upper reference limit. Importantly, myocardial injury alone does not establish MI. A clinical diagnosis of MI requires acute myocardial injury together with evidence of acute myocardial ischemia derived from symptoms, ECG abnormalities, coronary pathology, or imaging evidence of new loss of viable myocardium or regional wall-motion abnormality. The previous numerical MI classification has been replaced by three clinically oriented categories: **primary MI**, caused by an acute coronary pathology; **secondary MI**, resulting from oxygen supply-demand imbalance due to another acute condition; and **procedure-related MI** following a cardiac intervention. This approach is particularly relevant in emergency care, where elevated troponin may accompany sepsis, arrhythmias, acute heart failure, pulmonary embolism, hypertensive emergencies, and other non-coronary conditions. The Fifth UDMI also reinforces serial hs-cTn testing, sex-specific thresholds, and greater use of coronary and cardiac imaging when the mechanism of myocardial injury remains uncertain.

Conclusion: The 2026 Fifth UDMI shifts the diagnostic focus from **"Is troponin elevated?"** to **"Why is troponin elevated, and is the myocardial injury ischemic?"** For emergency physicians, this represents a clinically meaningful transition from biomarker-centered diagnosis toward integrated, pathophysiology-based assessment, potentially improving differentiation of acute MI from other causes of myocardial injury and supporting more appropriate downstream investigation and treatment.

Keywords: Myocardial infarction; Cardiac troponin; Myocardial injury; Emergency medicine; Fifth Universal Definition.

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ASSESSMENT OF CARDIOVASCULAR AND IMMUNOLOGICAL PARAMETERS IN PREGNANT WOMEN WITH ARTERIAL HYPERTENSION

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Hypertensive disorders of pregnancy are associated with maternal cardiovascular and immunological alterations. Investigation of macrophage–lymphocyte rosettes (MLR) formation in vitro provides additional information.

Purpose: Our purpose was to assess cardiovascular changes and activity of immunocompetent cells in pregnant women with hypertensive disorders and to evaluate their dynamics during treatment.

Methods: We observed 90 pregnant women aged 18-45y. Arterial hypertension was detected in 24, among them 4 women had preexisting hypertension, 8 had a gestational arterial hypertension, 12 – preeclampsia without other co-morbidities. All P underwent Ecg, echocardiography(TTE), lab tests and estimation of MLR formation in 72-hour blood leukocyte cultures.

In healthy donors amount of MLR equals 37,4 ±2.2%, In the physiological pregnant women (ph P) MLR decreases to 22-30%. Elevated levels of MLR were observed in AH compared to healthy Pregnant. Previous studies showed that MLR in vitro increases significantly in P with stress and premature birth. We divided Pregnant women into 4 groups(gr): I- physiological pregnant P, II- P with preexisting hypertension, III- P with gestational arterial hypertension, IV- P with preeclampsia.

Results: In I gr amount of MLR was in normal range for pregnant(18 – 29%), while it was moderately increased in II and III gr (30-40%) and significantly increased in IV gr (45-60%) indicating impending premature birth. Notable, that 3P with preexisting hypertension developed peripartum cardiomyopathy after 36 weeks of pregnancy. According to TTE mild mitral regurgitation was observed in 85% of physiological pregnancies, while 33% of pregnants with AH had mild MR and the rest 67% had moderate MR. Left atrial size was normal in physiological pregnancy, in pregnants with arterial hypertension it was normal or borderline increased, in 3 with preeclampsia it was increased. These 3P revealed PPCM with diastolic dysfunction - impaired relaxation, decreased ejection fraction and markedly increased NT-proBNP. In other P with AH or preeclampsia, EF was preserved. Diastolic dysfunction was observed only in 6 Patients with preeclampsia (50% of PE) including Pregnants with PPCM. After treatment and

delivery, normalization of blood pressure, resolution of volume overload, and marked reduction of MLR up to normal range were observed.

Conclusions: Hypertensive disorders of pregnancy are associated with increased MLR formation, reflecting activation of immunological processes. Reduction of MLR levels in parallel with clinical and hemodynamic stabilization, suggests its potential role as a marker for disease severity and effectiveness of treatment in addition to Echo data. Future studies in this direction is reasonable.

Keywords: Pregnancy; Arterial Hypertension; Cardio-Immunology; Echocardiography; Cardiovascular Changes

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OPIOID DRUG POISONING, COMPLICATIONS AND PREVENTION

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Introduction: Acute opioid poisoning remains a challenge in Critical care and toxicology, with the growing diversity of potent synthetic opioids and long-acting substances. Opioid-induced severe respiratory failure can initiate hypoxic and metabolic disturbances that extend beyond the initial toxic effect. Although naloxone is a cornerstone of treatment, its shorter duration of action compared with certain opioids may cause renarcotization, a period of transient clinical improvement. Consequently, survival depends not only on reversing opioid effects but also on early recognition and preventing secondary complications.

Aims: To characterize the major life-threatening complications associated with severe acute opioid poisoning, examine their underlying pathophysiological mechanisms, and identify clinical priorities for reducing complication-related morbidity and mortality.

Materials and Methods: A retrospective cohort analysis was undertaken using clinical records from a critical care toxicology department. The study population comprised patients with acute severe opioid poisoning complicated by coma and respiratory failure. Documented outcomes included aspiration, respiratory failure, toxic-hypoxic encephalopathy, rhabdomyolysis, acute kidney injury, compartment syndrome, cardiovascular failure, and cardiac arrest. Complications occurring in patients who received naloxone were also considered. Serum lactate concentration, duration of coma, and length of intensive care unit (ICU) stay were examined as clinically relevant indicators of illness severity and treatment course.

Results: The clinical analysis focused on the complex interaction between opioid-induced hypoventilation, tissue hypoxia, impaired consciousness, and secondary organ damage. Persistent or recurrent respiratory depression may contribute to neurological injury, while aspiration can further compromise pulmonary function. Prolonged immobilization during coma may promote muscle ischemia, rhabdomyolysis, and acute kidney injury, with compartment syndrome representing a further potentially serious consequence. Elevated lactate concentrations may provide additional evidence of impaired tissue perfusion. The occurrence of complications despite

naloxone administration underscores the need for continued monitoring and comprehensive supportive care.

Conclusion: Severe opioid poisoning should be approached as a potentially multisystem toxicological emergency rather than an isolated episode of respiratory depression. Early airway management, effective ventilation, appropriately titrated naloxone, surveillance for recurrent toxicity, and systematic assessment for secondary organ injury are fundamental components of care. Individualized treatment directed toward the complications identified in each patient may reduce preventable organ failure. Further evaluation of clinical predictors, including lactate concentration and coma duration, may help improve risk complications and guide intensive care management.

Keywords: opioid poisoning, hypoxia, renarcotization,

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MANAGEMENT OF SCAPHOID FRACTURES

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Scaphoid fractures represent the most common carpal bone injury, accounting for approximately 60% of all carpal fractures. Due to the scaphoid's retrograde blood supply, managing these injuries poses unique clinical challenges, with a high risk of complications such as avascular necrosis (AVN) and nonunion if left untreated or poorly managed. Scaphoid fractures typically result from a fall onto an outstretched hand (FOOSH), presenting as localized tenderness in the anatomical snuffbox. Early and accurate diagnosis is critical, yet initial radiographs often miss occult fractures. Advancements in cross-sectional imaging, specifically Computed Tomography (CT) for structural displacement and Magnetic Resonance Imaging (MRI) for occult injuries and vascular status, have significantly enhanced diagnostic precision. Treatment stratification relies primarily on fracture location (distal pole, body, or proximal pole) and structural stability. While conservative casting or standard compression screws yield results in acute settings, management in the delayed period presents a particularly significant challenge when aseptic necrosis has already developed. In hand surgery, a unified standard of care for such neglected cases has not yet been established due to the diversity and complexity of individual clinical presentations.

This presentation focuses primarily on the surgical reconstruction of osteonecrosis of the proximal pole of the scaphoid in the delayed period. The proximal pole of the hamate bone closely resembles the proximal pole of the scaphoid in its geometric and structural characteristics. Based on this anatomical affinity, a new method is presented — ipsilateral autotransplantation of the proximal pole of the hamate bone combined with concurrent scapholunate ligament reconstruction. Injury chronicity, patient age, and the degree of radiocarpal osteoarthritis were utilized as the primary criteria for selecting patients and predicting the outcomes of this surgical strategy.

A retrospective analysis of the performed surgical interventions demonstrates the high clinical efficacy and uniqueness of this method. The study highlights that an adequate, targeted course of rehabilitation in the postoperative period is of critical importance for optimizing functional outcomes. Furthermore, risk factor analysis underscores that tobacco consumption sharply

increases the probability of developing pseudoarthrosis (nonunion) and recurrent necrosis, severely compromising graft integration.

Concurrent hamate autotransplantation and scapholunate ligamentous reconstruction represent an effective and structurally sound alternative for treating delayed fractures and aseptic necrosis of the proximal pole of the scaphoid. The clinical success of this procedure relies heavily on strict patient selection criteria, minimization of harmful habits (tobacco), and a rigorous postoperative rehabilitation protocol.

Keywords: Scaphoid fracture; Proximal pole osteonecrosis; Hamate autotransplantation; Scapholunate ligament; Hand surgery.

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MOLECULAR DIAGNOSTICS IN CLINICAL SETTINGS: CURRENT CHALLENGES AND ACHIEVEMENTS

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Advances in genomics, artificial intelligence, and high-throughput sequencing technologies are continuously expanding the role of molecular diagnostics in healthcare. Clinical next-generation sequencing (NGS), liquid biopsy, and multi-omics approaches are increasingly becoming integral components of patient management, enabling more accurate diagnosis, refined prognostic assessment, and personalized treatment selection.

The rapid evolution of genomic technologies, particularly NGS, has significantly enhanced sequencing performance while reducing both costs and turnaround times. These improvements have made clinical genomic testing more accessible and practical for routine healthcare, accelerating its integration into clinical practice and supporting the broader implementation of precision medicine.

Despite these remarkable advances and widespread adoption, several challenges continue to hinder the full clinical potential of molecular diagnostics. These include technical and analytical limitations, quality assurance and regulatory requirements, complexities in bioinformatics and data analysis, and the interpretation of clinically relevant genomic variants.

In this presentation, I will discuss the major challenges associated with implementing clinical genomics in patient care and highlight practical strategies to address these barriers. Through selected examples, I will demonstrate approaches that can enhance the clinical utility of molecular diagnostics and maximize its impact on patient outcomes.

Keywords: Molecular Diagnostics, Clinical Genomics, Next Genetation Sequencing, Clinical Workflow

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KINEMATICS OF TRAUMA, ACUTE INJURY MANAGEMENT, AND MASS CASUALTY TRIAGE

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Trauma remains a leading global cause of preventable morbidity and mortality, requiring prompt and systematic medical interventions. In the prehospital setting, understanding the kinematics of trauma — the analysis of energy transfer, biomechanical forces, and mechanisms of injury (blunt vs. penetrating)—is essential for early clinical pattern recognition, predicting hidden internal damage, and anticipating life-threatening conditions prior to hospital arrival.

During mass casualty incidents (MCIs), prehospital care providers face extreme resource limitations, necessitating rapid, structured triage protocols (such as START or SALT) to categorize patients based on survivability and immediate life-saving needs. Prehospital management focuses heavily on the "Diamond of Death" mitigation, prioritizing critical interventions such as catastrophic hemorrhage control (tourniquet application and wound packing), airway management, tension pneumothorax decompression, and prevention of hypothermia and shock. Effective prehospital response in mass casualty scenarios requires seamless coordination, standardized field triage, rapid evacuation protocols, and integration with regional disaster systems to optimize survival rates and ensure the efficient distribution of casualties to receiving healthcare facilities.

Keywords: Trauma Kinematics, Prehospital Trauma Care, Mass Casualty Incidents (MCIs), Prehospital Triage, Disaster Medicine.

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SYSTEMATIC EMERGENCY MANAGEMENT AND INTERNATIONAL EMERGENCY MEDICAL TEAM (EMT) RESPONSE TO NATURAL AND TECHNOLOGICAL DISASTERS

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Natural disasters (such as earthquakes, floods, and hurricanes) and technological or man-made catastrophes present unprecedented challenges to local healthcare infrastructures, frequently resulting in massive surges of casualties, infrastructural collapse, and critical resource shortages. Effective disaster mitigation requires robust, systematic emergency management, encompassing coordinated multi-agency response, scalable command structures, and structured prehospital and field-level care.

In such large-scale crises, local capacities are often overwhelmed, necessitating the deployment of international assistance. The World Health Organization's Emergency Medical Teams (WHO EMT) initiative provides a standardized, globally coordinated framework for deploying self-sufficient, highly trained medical personnel. WHO EMTs ensure the delivery of quality-assured clinical care, bridge critical gaps in trauma and emergency management, support local health systems, and streamline operations across diverse disaster environments—ranging from seismic events to industrial and technological hazards. Integrating systematic emergency coordination with international EMT mechanisms is paramount for reducing preventable mortality, optimizing surge capacity, and enhancing global health security during complex humanitarian emergencies.

Keywords: Systematic Emergency Management, Disaster Medicine, Natural Disasters, Technological Disasters, WHO Emergency Medical Teams (EMT), Humanitarian Response.

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WHEN EATING TRIGGERS SWEATING: A CASE OF POST-TRAUMATIC FREY'S SYNDROME

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Frey's syndrome, also known as auriculotemporal nerve syndrome, causes localized sweating, flushing, and warmth on the face, usually on one side, triggered by eating, tasting, seeing, or thinking about food. Gustatory sweating and flushing are caused by aberrant regeneration of autonomic nerve fibers following parotid gland trauma or surgery. Although symptoms typically develop within months after injury, delayed presentations may complicate diagnosis and prolong patient discomfort. This case highlights the importance of recognizing delayed-onset Frey's syndrome and demonstrates successful minimally invasive treatment with botulinum toxin A. A 34-year-old male presented with progressive unilateral facial sweating triggered by mastication. About three to four years after parotid trauma and surgery, the patient began to notice wetness on the left side of their cheek while eating. Minor's starch-iodine test was used, which is considered the gold standard for diagnosing Frey's syndrome. Intradermal botulinum toxin A injections were successfully administered throughout the mapped region. This case illustrates that accurate history-taking, early recognition of characteristic symptoms, and appropriate diagnostic testing are essential for the effective management of Frey's syndrome.

Keywords: Frey's syndrome; Gustatory hyperhidrosis; Parotid trauma; Botulinum toxin A; Minor's starch-iodine test.

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ACUTE ARSENIC POISONING IN EMERGENCY MEDICINE: CONTEMPORARY APPROACHES TO DIAGNOSIS AND MANAGEMENT

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Background: Acute arsenic poisoning is a potentially life-threatening toxicological emergency characterized by rapid clinical deterioration and multisystem involvement. Although acute exposure is relatively uncommon, delayed recognition and treatment may result in severe complications and increased mortality. Early diagnosis and timely therapeutic intervention are essential for improving clinical outcomes.

Objective: This narrative review aims to summarize the principal mechanisms of arsenic toxicity, its clinical manifestations, diagnostic challenges, and contemporary approaches to emergency management and treatment.

Clinical and Pathophysiological Considerations: Arsenic exerts its toxic effects primarily through the inhibition of essential cellular enzymes, disruption of mitochondrial function, impairment of adenosine triphosphate (ATP) production, and induction of oxidative stress. Acute poisoning commonly presents severe gastrointestinal manifestations, including abdominal pain, nausea, vomiting, and profuse watery diarrhea, potentially leading to profound dehydration, electrolyte disturbances, and circulatory shock. Severe systemic toxicity may be associated with cardiovascular instability, QT interval prolongation, life-threatening arrhythmias, encephalopathy, acute kidney injury, and multiorgan dysfunction.

Diagnosis and Management: Diagnosis requires a high index of clinical suspicion, careful assessment of exposure history, and appropriate toxicological investigations. Urinary arsenic measurement, preferably with arsenic speciation when indicated, is particularly important for confirming exposure. Emergency management prioritizes airway protection, hemodynamic stabilization, intravenous fluid resuscitation, correction of electrolyte abnormalities, and continuous cardiac monitoring. Chelation therapy with agents such as dimercaprol or succimer (dimercaptosuccinic acid, DMSA) may be considered clinically significant poisoning following consultation with a medical toxicologist. The selection and timing of chelation should be

individualized according to the severity of toxicity, clinical presentation, and availability of appropriate treatment.

Conclusion: Acute arsenic poisoning remains a significant diagnostic and therapeutic challenge in emergency medicine. Early recognition of characteristic clinical manifestations, prompt supportive care, appropriate toxicological assessment, and timely consideration of chelation therapy are essential components of effective management. A multidisciplinary approach involving emergency physicians, clinical toxicologists, and critical care specialists may improve patient outcomes and reduce the risk of severe complications and mortality.

Keywords: Acute arsenic poisoning; Emergency medicine; Clinical toxicology; Multiorgan dysfunction; Chelation therapy.

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OCULAR DIROFILARIASIS: CLINICAL CASES

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Over the past years, we have observed an increase in the number of animals and humans infected with dirofilariasis in moderate climates. Earlier, we described five cases of ocular dirofilariasis from 2015 to 2018. This article presents four new cases, all from 2019. One clinical case involves extremely rare localization in the anterior chamber of the eye. Only a few reports of Dirofilaria detected in the sclera, vitreous, and retina have been published.

In Georgia, the problem of dirofilariasis has not been sufficiently studied. However, current evidence indicates that topographical characteristics contribute to the spread of the disease across the country. To date, no ocular cases of the disease have been identified, but only a single confirmed case has been diagnosed with subcutaneous localization of *Dirofilaria repens* at the S.Virsaladze Research Institute of Parasitology and Tropical Medicine in 2015. But the last time in Georgia has increased the number of animals infected with dirofilariasis.

In July, 2026 in First University Clinic of Tbilisi State Medical University was first case of subconjunctival helminth, which removal from orbital space successfully.

Key words: ocular dirofilariasis, *Dirofilaria repens,* subconjunctival helminth, zoonotic infection.

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THE IMPACT OF PATHOPHYSIOLOGICAL ALTERATION ON DRUG EFFECTS DURING CRITICAL ILLNESS

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Background: Critically ill patients are at high risk for development of life-threatening infection leading to sepsis and multiple organ failure. Adequate antimicrobial therapy is pivotal for optimizing the chances of survival. Dosing guidelines used in the Intensive Care Unit (ICU) are frequently extrapolated from healthy volunteers or stable patient populations. However, critical illness triggers severe, dynamic pathophysiological shifts that fundamentally disrupt standard pharmacokinetic (PK) and pharmacodynamic (PD) profiles, that invalidate these standard assumptions, frequently resulting in sub-therapeutic or toxic drug concentrations. **Objective:** This paper evaluates how critical illness-induced alterations—specifically capillary leak, fluid resuscitation, organ failure—impact the systemic exposure and therapeutic efficacy of essential medications.

Methods: A comprehensive review of recent clinical trials and observational data was conducted, evaluating PK/PD parameter variations (volume of distribution (Vd), clearance (CL), plasma protein binding) across various classes of critical care medications, with an emphasis on hydrophilic antimicrobials, sedatives, anticoagulants, and vasoactive agents. **Results:** The systemic inflammatory response syndrome (SIRS) and endothelial dysfunction cause significant capillary leaking. When paired with aggressive fluid resuscitation, this drastically increases Vd of hydrophilic drugs, causing immediate plasma underdosing. Augmented renal clearance (frequently observed in early hyperdynamic sepsis) accelerates the elimination of renal-cleared medications, concurrently, states of cardiac hyperperfusion and the use of inotropes can trigger enhanced renal clearance (ARC), accelerating drug elimination and dropping concentrations below therapeutic thresholds. Conversely, subsequent acute kidney injury (AKI), hepatic hypoperfusion, and down-regulated cytochrome P450 activity significantly reduce drug clearance, elevating the risk of toxicity. Altered splanchnic blood flow and changes in gastric pH compromise enteral absorption. Critical illness also markedly reduces plasma albumin levels,

shifting the free-fraction of highly protein-bound medications unpredictably. **Conclusion:** Standard, unadjusted dosing protocols fail a significant portion of critically ill patients due to high inter- and intra-individual PK/PD variability. Individualizing drug therapy through Therapeutic Drug Monitoring (TDM), extended or continuous infusions, and patient-specific loading doses is essential to optimize clinical outcomes in the Intensive Care Unit (ICU).

Keywords: Organ failure; Intensive care unit; Pharmacodynamics; Pharmacokinetics.

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LONG-TERM CONSEQUENCES OF CRITICAL ILLNESS AND ICU CARE: POST-INTENSIVE CARE SYNDROME

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Advances in intensive care have improved survival from critical illness, increasing recognition of persistent morbidity after discharge. Post-intensive care syndrome (PICS) describes new or worsening physical, cognitive, and mental health impairments that develop following critical illness and persist beyond acute hospitalization. Related psychological difficulties among family members are termed PICS-family. Together, these conditions challenge conventional definitions of successful intensive care and emphasize the importance of recovery, independence, and quality of life.

This presentation reviews the spectrum of long-term consequences of critical illness, including chronic critical illness, persistent organ dysfunction, and PICS. Physical sequelae include intensive care unit (ICU)-acquired weakness, reduced exercise capacity, fatigue, and limitations in daily activities. Recovery of pulmonary function does not necessarily indicate restoration of functional capacity, and disability may continue for years. Cognitive impairments affect memory, attention, and executive function, while psychological manifestations include depression, anxiety, and post-traumatic stress symptoms. These overlapping problems may delay return to work, increase dependence on caregivers, and create social and economic burdens.

The development of PICS reflects interactions between pre-existing vulnerability, acute disease severity, and exposures during ICU treatment. Relevant factors include frailty, sepsis, respiratory failure, prolonged mechanical ventilation, immobilization, and delirium. Family members require consideration because uncertainty, caregiving responsibilities, and psychological distress can persist after discharge.

Prevention should begin during ICU admission and continue across transitions of care. The ABCDEF bundle provides a practical framework encompassing pain assessment and treatment, spontaneous awakening and breathing trials, appropriate analgesia and sedation, delirium assessment and prevention, early mobility, and family engagement. Guideline-based care also addresses sleep disruption and supports rehabilitation adapted to clinical stability and individual needs. After discharge, coordinated follow-up should assess physical function, cognition, psychological health, and caregiver needs, while facilitating access to rehabilitation and

appropriate specialist services. Although multidisciplinary recovery clinics can identify unmet needs, evidence regarding their effects on long-term outcomes remains limited.
Overall, PICS represents an important consequence of critical illness that requires sustained attention beyond hospital survival. Integrating prevention, individualized rehabilitation, family support, and structured assessment into critical care pathways may promote recovery. Future research should establish effective interventions and prioritize outcomes meaningful to survivors, including functional independence, participation in everyday life, and wellbeing.

Keywords: Critical care; Sepsis; Long-term outcomes; Chronic critical illness

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PERSONALIZED MANAGEMENT OF SEPSIS

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Sepsis is a heterogeneous syndrome characterized by life-threatening organ dysfunction resulting from a dysregulated host response to infection. Although clinical definitions and severity scores facilitate recognition and prognostic assessment, they do not adequately capture the biological diversity underlying disease trajectories. Personalized management therefore requires integrating clinical characteristics with immune profiling, molecular endotypes, and repeated assessment to identify patients most likely to benefit from specific interventions.

The host response to sepsis involves interactions between inflammation, immune suppression, and metabolic dysfunction. These processes may coexist and evolve over time, leading to recovery, early multiorgan failure, or chronic critical illness with persistent inflammation, immunosuppression, and catabolism. Mechanisms contributing to immune dysfunction include lymphocyte apoptosis, impaired neutrophil activity, expansion of regulatory T cells and myeloid-derived suppressor cells, reduced interferon-gamma production, and decreased monocyte human leukocyte antigen-DR expression. Such abnormalities increase vulnerability to secondary bacterial and fungal infections and viral reactivation, emphasizing the importance of evaluating immune status throughout the disease course.

Clinical phenotyping and molecular endotyping offer complementary approaches to patient stratification. Transcriptomic studies have identified subgroups characterized by immune competence, immunosuppression, acute inflammation, or immunometabolic disturbances, with differing outcomes. Prognostic enrichment identifies patients at increased risk of deterioration or death, whereas predictive enrichment seeks to identify subgroups more likely to respond to a particular treatment. Biomarkers, including ferritin, lymphocyte counts, inflammatory mediators, and monocyte human leukocyte antigen-DR expression, may support this distinction. However, dynamic endotype trajectories indicate that a single measurement may be insufficient for treatment selection.

Emerging therapeutic strategies aim to match immunomodulation to the dominant biological abnormality. Anakinra has been investigated in patients with macrophage activation-like

features, while interferon-gamma has been evaluated in those with sepsis-associated immunosuppression. Similarly, extracorporeal endotoxin removal may offer benefits in selected biological subgroups, but subgroup findings require cautious interpretation and prospective confirmation.

Personalized sepsis management should combine established supportive and infection-directed care with biologically informed stratification and longitudinal reassessment. Translation into practice requires accessible, validated biomarkers, standardized endotype definitions, large clinical and molecular registries, and adequately designed interventional trials. Ultimately, aligning treatment with the patient's evolving immune phenotype may improve therapeutic precision, reduce ineffective interventions, and address both acute organ dysfunction and the persistent consequences of sepsis among survivors.

Keywords: Precesion medicine; Phenotypes; Biomarkers; Immunotherapy

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ANTIBIOTIC CHOICES FOR BLOODSTREAM INFECTIONS IN THE ICU: NAVIGATING THERAPY IN THE AI ERA

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Selecting optimal antibiotic therapy for bloodstream infections in critically ill patients remains a major clinical challenge, particularly in the era of increasing antimicrobial resistance and expanding therapeutic options. Appropriate empirical coverage, rapid microbiological diagnostics, and timely treatment optimization are essential components of effective management. Artificial intelligence and machine learning are opening new perspectives for predicting resistant pathogens, supporting antibiotic selection, and personalizing treatment strategies. However, their actual clinical value, generalizability, and ability to outperform conventional approaches remain to be fully established. The lecture will discuss current challenges and evolving strategies in antibiotic selection for bloodstream infections in the ICU, exploring how emerging AI-based tools may complement established clinical reasoning and antimicrobial stewardship principles to improve therapeutic decision-making.

Keywords: artificial intelligence; machine learning; sepsis; antibiotics

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FEMORAL NECK FRACTURE MANAGEMENT IN ELDERLY PATIENTS

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Background: Femoral neck fractures represent a major global health challenge, with international one-year mortality rates ranging from 20% to 30% and caseloads projected to nearly double by 2050. Because the intra-capsular environment relies on a tenuous retrograde blood supply from the medial femoral circumflex artery, displaced fractures carry a severe risk of avascular necrosis and nonunion.

Objective: To outline an efficient, evidence-based clinical pathway for the perioperative management, surgical decision-making, and secondary prevention of femoral neck fractures to optimize patient outcomes.

Methods: We synthesize current evidence regarding injury classification (emphasizing the high mechanical instability of Pauwels Type III shear angles), rapid pre-operative optimization, tailored surgical interventions, enhanced recovery protocols, and secondary fracture prevention.

Results:

- **Pre-operative Care:** Prioritizes clinical stabilization for surgery within 24–48 hours, multimodal analgesia incorporating scheduled NSAIDs to limit systemic opioids, and aggressive correction of reversible deficits (e.g., anemia, dehydration) without procedural delay.
- **Surgical Management:** Displacement dictates intervention, making primary arthroplasty the standard of care. Hemiarthroplasty minimizes operative time and blood loss for lower-demand, frail patients, whereas Total Hip Arthroplasty (THA) provides superior long-term functional scores for highly active individuals. Choice of surgical exposure balances visualization (posterior approach), stability (lateral approach), and anatomical preservation (direct anterior approach).

- **Post-operative Care & Recovery:** An Enhanced Recovery After Surgery (ERAS) protocol targets mobilization within 24 hours, chemical thromboprophylaxis, and nutrition. Safe discharge requires stable oral pain control and independent mobility with an assistive device.
- **Secondary Prevention:** Mandates bone density assessments, calcium and Vitamin D optimization, and formal fall prevention training.

Conclusion: Implementing a standardized, multidisciplinary pathway focused on timely surgical intervention, appropriate arthroplasty selection, early mobilization, and secondary fracture prevention is essential for mitigating mortality and maximizing functional recovery in patients with femoral neck fractures.

Keywords: Orthopedics, Hemiarthroplasty, Arthroplasty, Fracture.

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THANATOTRANSCRIPTOME: POSTMORTEM GENE EXPRESSION AND ITS SIGNIFICANCE IN MEDICINE

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Recent advances in biology and medicine demonstrate that gene expression does not cease immediately at biological death. Research on mouse (*Mus musculus*) and zebrafish (*Danio rerio*) models conducted by Peter Noble and Alex Pozhitkov (2016–2017) revealed an increase in the activity of over 1,000 postmortem genes within 24 to 48 hours following death. Termed "zombie genes," these active genes and the synthesized messenger RNA (mRNA) form the thanatotranscriptome, proving that postmortem tissue remains transcriptionally dynamic.

As cellular regulatory mechanisms collapse, suppressed genes lose their constraints, resulting in peak activity during the postmortem interval (PMI). Five distinct functional categories have been identified:

- Embryonic Development Genes: Silenced postnatally, these reactivate postmortem.
- Oncogenes: Suppressed during life to prevent uncontrolled growth, these escape regulation after death.
- Stress and Immune Response Genes: Activated as cells attempt self-preservation (*autoresuscitation*) under extreme hypoxia.
- Apoptosis Genes: Regulate programmed cell death and cellular fragmentation.
- Epigenetic Modifiers: Facilitate nucleosome unwinding and DNA decondensation, triggering a cascade of sequential gene expression.

Additionally, human tissue data from the Genotype-Tissue Expression (GTEx) project highlights the heterogeneous, time-specific postmortem activation of homeobox (HOX) family genes, as well as specific liver biomarkers such as AMBP and AHSG.

Because postmortem genes activate and degrade along distinct temporal trajectories across different tissues, their transcriptomic profiles function as precision "molecular clocks." Analyzing the thanatotranscriptome allows forensic investigators to determine the post-mortem interval (PMI) with hourly precision.

During clinical death, cellular defense mechanisms temporarily preserve tissue viability. Deciphering these pathway dynamics provides practical strategies to:

- Protect the brain and vital organs from ischemic and hypoxic damage during resuscitation.
- Extend the cold/warm ischemia preservation windows for transplantable organs without requiring invasive genetic modifications.

Death is a gradual, systemic cascade rather than an instantaneous shutdown. The thanatotranscriptome demonstrates that cellular machinery continues to struggle for survival, offering critical diagnostic tools for forensic science and therapeutic strategies for regenerative and transplant medicine.

Keywords: Thanatotranscriptome, Postmortem Gene Expression, Zombie Genes, Post-Mortem Interval (PMI), Forensics, Organ Transplantation, Hypoxia, GTEx Project.

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CHANGES IN HEMORHEOLOGICAL PARAMETERS AND THEIR IMPACT ON THE COURSE OF HEART FAILURE

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Background: Heart failure is accompanied by hemodynamic disturbances and alterations in the microcirculatory system, including changes in hemorheological properties such as erythrocyte aggregation, erythrocyte deformability, and plasma viscosity, which influence the efficiency of blood flow. Significant hemorheological abnormalities also occur in patients with atrial fibrillation (AF), potentially contributing to impaired intracardiac hemodynamics and local tissue perfusion. This study assessed the relationship between hemorheological parameters and intracardiac hemodynamics in patients with heart failure and paroxysmal or persistent AF.

Objective: To evaluate changes in hemorheological parameters and their relationship with intracardiac hemodynamics and left ventricular functional parameters in patients with heart failure (CHF), functional class I–II, and paroxysmal or persistent AF.

Materials and Methods: The study included 32 patients with CHF and paroxysmal or persistent AF and 10 healthy controls aged 20–65 years. Patients with valvular heart disease, malignancy, or diabetes mellitus were excluded. Erythrocyte aggregation index (EAI), erythrocyte deformability index (EDI), plasma viscosity, fibrinogen level, and left ventricular functional parameters, including ejection fraction (EF), were assessed according to the study protocol.

Results: Hemorheological abnormalities became more pronounced with progression of AF. EAI was 33.9±9.4 in the study group. Mean fibrinogen levels were 332±29.7 in patients with paroxysmal AF and 398.4±10.9 in those with persistent AF, compared with 301±21.1 in controls. Left ventricular EF was 59.1±2.5% in controls, 52.4±6.7% in patients with paroxysmal AF, and 37.4±6.7% in patients with persistent AF and CHF. EAI increased significantly in an inverse relationship with left ventricular EF ($P<0.05$).

Conclusion: The findings indicate that hemorheological abnormalities, particularly increased erythrocyte aggregation, are associated with more prolonged and progressive forms of AF, reduced left ventricular systolic function, and the presence of CHF. The inverse relationship between EAI and EF suggests a potential contribution of hemorheological disturbances to the

complex hemodynamic and microcirculatory alterations accompanying heart failure. Assessment of hemorheological parameters during AF episodes may provide additional information for evaluating the clinical status and disease course in patients with heart failure.

Keywords: hemorheology; erythrocyte aggregation; atrial fibrillation; heart failure

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MALIGNANT HYPERTHERMIA

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Malignant hyperthermia (MH) is a rare, life-threatening inherited disorder triggered by volatile inhalational anesthetics and/or the depolarizing muscle relaxant suxamethonium. In susceptible individuals, calcium release from the sarcoplasmic reticulum in the skeletal muscle becomes abnormally accelerated, leading to a hypermetabolic state. Early signs of MH include unexplained hypercarbia (end-tidal carbon dioxide > 55 mm Hg), tachycardia, and muscle rigidity, particularly in the masseter. Rapid increases in core temperature (> 0.5 °C/15 min, with temperatures often exceeding 40 °C) are typical. With progression, respiratory and metabolic acidosis, arrhythmias, cola-colored urine (myoglobinuria), elevated serum potassium, and tented T-waves may develop, potentially leading to cardiac arrest or multiorgan failure. The Society of Anesthesiologists' guidelines for the management of MH in 2025 (Japanese version) emphasize the importance of early recognition and immediate intervention. The essential steps include discontinuing triggering agents, administering intravenous dantrolene (initially 1-2 mg/kg), aggressive cooling of the body, and managing complications, such as hyperkalemia and acidosis. On the basis of international standards, a higher initial dose of dantrolene is recommended. Preoperative assessment of MH risk should include history taking for anesthetic complications, a family history suggestive of MH susceptibility, signs of congenital myopathies, and careful anesthetic planning using non-triggering agents. Genetic testing and muscle biopsy may aid in the diagnosis but are not definitive in all cases. Further treatment includes managing complications related to a hypermetabolic response such as hyperkalemia and arrhythmias. This review is focused on the recognition and treatment considerations of MH in the emergency department to optimize therapy and improve patient morbidity and mortality.

Keywords: Malignant hyperthermia (MH), Dantrolene, myoglobinuria, treatment.

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NR0B1-RELATED ADRENAL HYPOPLASIA CONGENITA PRESENTING AS A NEONATAL SALT-WASTING CRISIS: A CASE REPORT

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Background. NR0B1-related X-linked adrenal hypoplasia congenita is a rare cause of primary adrenal insufficiency that may present in early infancy with a life-threatening salt-wasting crisis and clinically mimic congenital adrenal hyperplasia (CAH).

Case presentation. A male infant born at 39 weeks of gestation (birth weight, 3,630 g) developed lethargy and poor feeding on day 3 of life. Following an initial hospitalization for feeding difficulty and poor weight gain, he was readmitted approximately one week after discharge with hypovolemia, lethargy, and a depressed suck reflex. Laboratory investigations revealed metabolic acidosis, severe hyponatremia (112 mmol/L), and hyperkalemia (7.0 mmol/L), prompting evaluation for an adrenal salt-wasting disorder. Cortisol was below the laboratory reference interval, whereas serum 17-hydroxyprogesterone was not elevated (4.27 ng/mL; reference interval, 0.79–16.71). Aldosterone was 45.18 pg/mL (reference interval, 20–180). Electrolyte abnormalities persisted despite correction of acidosis and sodium supplementation. Hydrocortisone therapy was initiated and subsequently increased; after the addition of fludrocortisone, serum sodium and potassium normalized, feeding improved, and weight gain resumed. Genetic evaluation was initially directed toward CAH. Digital MLPA analysis of dried blood spot DNA did not identify a **CYP21A2** deletion; however, the available laboratory correspondence indicated that comprehensive **CYP21A2** testing was to be performed separately. Subsequent molecular laboratory correspondence reported a hemizygous frameshift variant in **NR0B1**, **NM_000475.5:c.595delT, p.(Ala194Argfs*70)**, providing molecular support for the diagnosis of X-linked adrenal hypoplasia congenita.

Conclusion. This case highlights NR0B1-related adrenal hypoplasia congenita as an important differential diagnosis in male neonates presenting with severe salt wasting. When 17-hydroxyprogesterone is not elevated, and the initial evaluation does not support classic 21-hydroxylase deficiency, consider alternative causes of primary adrenal insufficiency, with

molecular genetic evaluation helping define the underlying etiology.
Keywords: NR0B1; adrenal hypoplasia congenita; neonatal adrenal insufficiency; salt-wasting crisis; congenital adrenal hyperplasia; frameshift variant

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THE IMPORTANCE OF SCREENING IN PREVENTING INTENSIVE CARE ADMISSIONS FOR SEVERE COMBINED IMMUNODEFICIENCY (SCID): LESSONS FROM A HIGH-CONSANGUINITY COHORT

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Background: Severe combined immunodeficiency (SCID) represents a group of treatable disorders leading to frequent infections, malignancies, and even death if left untreated. Without newborn screening (NBS), infants develop severe recurrent infections that require emergency intensive care (NICU/PICU) admissions, often ending in death before a diagnosis is made. Ethnic Azerbaijanis represent a highly consanguineous, isolated minority residing mostly in the southern part of Georgia. The prevalence of rare genetic immunodeficiencies has never been studied in this population. We have identified several seemingly unrelated families with homozygous *ADA* and *JAK3* mutations from this community, all of whom died within several months after birth due to SCID, whereas early identification could have led to life-saving interventions. Based on these findings, SCID may be heavily underdiagnosed in this region.

Methods: We analyzed the clinical and genetic records of ethnic Azerbaijani SCID patients hospitalized in the NICU/PICU to document disease severity, hospital course, and underlying mutations. Diagnosis was established via immune profiling and genetic testing (whole exome sequencing). To assess the approximate incidence of SCID in ethnic minorities residing in southern Georgia, we are currently performing retrospective screening of ethnic Azerbaijani newborns' dried blood spot cards using TREC/KREC assays.

Results and Discussion: In one ethnic Azerbaijani family, three siblings aged 4, 8, and 7 months, died of recurrent respiratory infections and low count of T and B lymphocytes, suggesting of SCID. Genetic testing revealed a homozygous *JAK3*, c.1383dup p.(Leu462Alafs*58) pathogenic variant in the third sibling. Another infant patient from the Dmanisi region was admitted at 7 weeks with severe pneumonia, respiratory failure, sepsis, and peritonitis; immunological assays were suggestive of SCID. Further genetic testing confirmed a homozygous *ADA*, c.44A>T

p.(His15Leu) variant. The other unrelated infant from Marneuli with immunodeficiency also had the same recurrent *ADA* variant. The occurrence of this rare *ADA* variant in two unrelated families from neighboring regions (60 km distance between Dmanisi and Marneuli), may indicate on a founder effect. This finding raises the possibility that other children with SCID in the region remain undiagnosed and underscores the importance of timely recognition and genetic testing.

Conclusion: Our finding suggest that recurrent homozygous mutations in seemingly unrelated families may be due to founder effect. Moreover, SCID may be underdiagnosed among ethnic minorities residing in southern Georgia, emphasizing the urgency and cost-effectiveness of introducing SCID into national NBS. Implementing routine TREC/KREC newborn screening will enable early presymptomatic diagnosis, avoid emergency PICU/NICU admissions, and ensure life-saving curative treatment before severe infections occur. Precise molecular diagnosis also enables genetic counselling of families and informed decision-making for reproductive risk management.

Keywords: Newborn screening, severe combined immunodeficiency, intensive care, consanguinity, TREC/KREC, *ADA* deficiency, *JAK3*

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FEVER IN THE INTENSIVE CARE UNIT: THE ROLE OF NEW BIOMARKERS IN THE EARLY DIAGNOSIS OF INFECTION AND SEPSIS

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Fever is a common clinical problem in critically ill patients and does not necessarily indicate bacterial infection. Infectious and non-infectious inflammatory conditions may produce similar clinical manifestations, making early differentiation challenging. Failure to recognize infection may delay appropriate antimicrobial treatment, whereas overdiagnosis can result in unnecessary antibiotic exposure. Biomarkers are increasingly used to complement clinical and microbiological assessment and support antimicrobial stewardship in the intensive care unit (ICU).

The aim of the study is to review the role of conventional and emerging biomarkers in differentiating bacterial infection and sepsis from non-infectious causes of fever in critically ill patients and to discuss their potential contribution to antibiotic decision-making.

New biomarkers provide additional information about different components of the host response. Soluble triggering receptor expressed on myeloid cells-1 (sTREM-1) reflects activation of neutrophils and monocytes during bacterial infection. Presepsin, a soluble CD14 subtype released during monocyte and macrophage activation, has emerged as a potential marker for early diagnosis and prognosis of sepsis. Pentraxin-3 (PTX3), produced locally by inflammatory and endothelial cells, rises rapidly during systemic inflammation. Reduced monocyte HLA-DR expression may identify sepsis-associated immunosuppression and immunoparalysis, while pancreatic stone protein (PSP) represents another promising marker for early recognition of sepsis. Novel host-response technologies extend beyond measurement of individual circulating proteins. IntelliSep evaluates biophysical changes in leukocytes, while mRNA-based assays such as SeptiCyte RAPID and TriVerity assess host gene-expression patterns.

No single biomarker can reliably differentiate all infectious from non-infectious causes of fever in critically ill patients. Biomarkers should therefore complement, rather than replace, clinical assessment, microbiological investigation, evaluation of organ dysfunction, and identification of the potential source of infection. Combining conventional biomarkers with emerging host-

response, molecular, and biophysical technologies may improve the differential diagnosis of fever in the ICU, reduce unnecessary antibiotic exposure, and support more individualized antimicrobial therapy.

Keywords: Fever; Intensive care unit; Biomarkers; Antimicrobial stewardship.

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LUNG ULTRASOUND EVALUATION IN INTENSIVE CARE: DIAGNOSTIC PRINCIPLES, CLINICAL APPLICATION, AND AI-ASSISTED INTERPRETATION

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Background: Lung ultrasound (LUS) has become an essential bedside diagnostic tool in intensive care, allowing rapid, noninvasive, and repeated assessment of pulmonary conditions without ionizing radiation. Despite its clinical advantages, accurate interpretation requires a comprehensive understanding of ultrasound artifacts, standardized scanning protocols, and their integration into clinical decision-making. Recent advances in artificial intelligence (AI) offer additional opportunities to support image interpretation and improve diagnostic consistency.

Objective: To present an evidence-based educational approach to lung ultrasound in intensive care, integrating fundamental diagnostic principles, practical clinical applications, and emerging AI-assisted interpretation technologies.

Methods: A structured educational presentation was developed based on contemporary scientific literature, clinical protocols, and systematic reviews published through 2026. The educational framework combines ultrasound physics, recognition of normal and pathological sonographic patterns, standardized examination techniques, and clinical decision-making algorithms. Particular attention is given to the Bedside Lung Ultrasound in Emergency (BLUE) protocol and recent evidence concerning AI applications in lung ultrasound.

Results: The educational framework addresses key sonographic findings, including A-lines, B-lines, lung sliding, lung pulse, pleural abnormalities, and pulmonary consolidation. Their clinical interpretation is discussed in relation to acute respiratory failure, pneumothorax, pulmonary edema, pneumonia, atelectasis, acute respiratory distress syndrome, and pleural effusion. The presentation emphasizes dynamic monitoring of lung aeration and assessment of responses to mechanical ventilation, positive end-expiratory pressure adjustments, fluid management, and other therapeutic interventions. Emerging AI applications, including automated artifact detection, image classification, segmentation, and quantitative analysis, are examined alongside their current limitations, particularly insufficient external validation, variability in image acquisition, and limited generalizability across clinical settings.

Conclusion: A structured educational approach integrating ultrasound physics, standardized scanning protocols, clinical interpretation, and emerging AI technologies may support the effective application of lung ultrasound in intensive care. Although AI-assisted interpretation offers promising opportunities to improve diagnostic reproducibility, it should currently complement rather than replace clinical expertise. Integrating these concepts into medical education may strengthen bedside diagnostic skills and promote evidence-based clinical decision-making.

Keywords: Lung ultrasound; Intensive care; Point-of-care ultrasound; Artificial intelligence; Medical education.

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OBSTETRIC SEPSIS AND SEPTIC SHOCK: CRITICAL CARE RESUSCITATION, HEMODYNAMIC STABILIZATION, AND MULTIDISCIPLINARY MANAGEMENT

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Obstetric sepsis and septic shock remain life-threatening complications of pregnancy, childbirth, and the postpartum period, requiring rapid recognition, coordinated resuscitation, and timely source control. Physiological changes associated with pregnancy may obscure early signs of clinical deterioration, while delays in diagnosis and treatment can rapidly lead to multiorgan dysfunction and maternal death. Effective management therefore requires close collaboration between obstetricians, intensivists, anesthesiologists, emergency physicians, microbiologists, and other relevant specialists.

This presentation focuses on contemporary critical care strategies for the recognition and management of obstetric sepsis and septic shock. Key topics include early identification of maternal deterioration, clinical assessment of organ dysfunction, appropriate use of laboratory investigations and microbiological cultures, and evaluation of potential infectious sources. Particular emphasis is placed on the initial resuscitation bundle, including prompt administration of empiric broad-spectrum antimicrobials, individualized intravenous fluid therapy, repeated assessment of perfusion, and early initiation of vasopressor support when hypotension persists despite adequate fluid resuscitation. Norepinephrine is discussed as the first-line vasopressor in septic shock, with hemodynamic targets adapted to the individual clinical situation.

The presentation also addresses source control, including the management of intrauterine and postoperative infections, and the indications for urgent obstetric intervention. Special consideration is given to pregnancy-specific physiological changes, fetal assessment when applicable, delivery-related decision-making, and postpartum critical care. Strategies for preventing fluid overload, recognizing evolving respiratory and renal dysfunction, and providing organ support in the intensive care unit are also reviewed.

By integrating obstetric and intensive care perspectives, this presentation aims to strengthen clinicians' ability to make timely, evidence-informed decisions in critically ill obstetric patients. The overarching objective is to improve maternal outcomes through early recognition, goal-

directed resuscitation, appropriate antimicrobial therapy, definitive source control, and coordinated multidisciplinary care.
Keywords: obstetric sepsis; septic shock; maternal critical care; resuscitation; hemodynamic stabilization; vasopressors; intensive care; source control.

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EARLY DIAGNOSIS AND MANAGEMENT OF SEPSIS IN THE EMERGENCY DEPARTMENT

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Sepsis is a life-threatening medical emergency that develops as a result of a dysregulated host response to infection and is characterized by organ dysfunction. Its progression may occur rapidly, within several hours, leading to septic shock and multiple organ failure. Early recognition of sepsis in the emergency department remains a significant challenge, as the initial clinical manifestations are often nonspecific. Therefore, timely diagnosis and prompt initiation of appropriate treatment are critical for improving clinical outcomes.

This paper reviews current approaches to early sepsis diagnosis and management in the emergency department, assesses the significance of early clinical and laboratory indicators, and determines the role of timely therapeutic interventions in improving patient outcomes. We reviewed contemporary scientific literature and international clinical guidelines on sepsis. Clinical and laboratory parameters used for the early recognition of sepsis were analyzed, including blood pressure, heart rate, respiratory rate, body temperature, level of consciousness, urine output, lactate levels, and signs of organ dysfunction. The importance of antimicrobial therapy, intravenous fluid administration, vasopressor support, and source control was also evaluated

The analysis showed that early sepsis identification requires systematic, repeated clinical assessment. The use of a single screening criterion or tool may be insufficient. Particular importance should be placed on the early detection of tissue hypoperfusion and organ dysfunction, assessment of lactate levels, and dynamic monitoring of hemodynamic status. In patients with suspected sepsis, rapid identification of the probable source of infection, collection of appropriate microbiological specimens, and timely initiation of antimicrobial therapy are key components of management. In the presence of hypotension and hypoperfusion, fluid therapy should be individually assessed and, when clinically indicated, vasopressor support should be initiated promptly.

The effectiveness of sepsis management in the emergency department largely depends on early recognition, rapid diagnostic assessment, and timely therapeutic intervention. The diagnosis of

sepsis should be based on a comprehensive assessment of the patient's clinical condition, organ dysfunction, and laboratory findings. The implementation of standardized early assessment and management algorithms, dynamic monitoring of the patient's condition, and timely source control are essential components of effective sepsis management in the emergency department.

Keywords: Sepsis, Septic Shock, Lactate Levels, Antimicrobial Therapy, Hemodynamic Support.

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PROGNOSTIC SIGNIFICANCE OF THE ASSOCIATION BETWEEN CLINICAL AND LABORATORY PARAMETERS AND BREAST CANCER MARKERS IN ATHEROSCLEROSIS-INDUCED CHRONIC KIDNEY DISEASE (CKD)

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Chronic kidney disease (CKD) and cardiovascular disease (CVD) are closely interrelated, and their coexistence is associated with an increased risk of complications and adverse clinical outcomes. Patients with breast cancer, particularly carriers of BRCA1/2 mutations, may also have an increased risk of cardiovascular and metabolic abnormalities. The BRCA1 protein plays a critical role in DNA repair, cell-cycle regulation, and antioxidant defense. Emerging evidence suggests that alterations in BRCA1 function may be involved not only in tumorigenesis but also in the pathophysiology of cardiovascular and renal injury. SUMO-specific cysteine proteases, particularly SENP1 and SENP2, may also play a potential role in these interconnected pathological processes.

The aim of this study is to evaluate the potential clinical and prognostic significance of BRCA1 protein and SENP1/SENP2 biomarkers at different stages of atherosclerosis-induced CKD associated with coronary artery disease (CAD), and to investigate their potential relationship with disease progression and renal dysfunction.

A comprehensive assessment of clinical and laboratory parameters is planned. The study cohort will be formed based on clinical symptoms, objective findings, medical history, relevant documentation confirming CKD, and disease staging. Renal function, including estimated glomerular filtration rate (eGFR), cardiovascular risk factors, and electrocardiographic and echocardiographic parameters will be assessed. Biomarker analysis will include determination of BRCA1 protein, SENP1, and SENP2 levels. The obtained data will be compared among relevant study groups. Potential associations with age, overweight, physical activity, dietary factors, dyslipidemia, smoking, alcohol consumption, arterial hypertension, and genetic risk factors will also be evaluated.

The study is expected to identify potential associations between BRCA1, SENP1, and SENP2 biomarker levels and impaired renal function, cardiovascular disease, and disease progression.

Comparative assessment of biomarker dynamics and changes in eGFR may contribute to the identification of early renal impairment and patients at increased risk of disease progression. The findings may also provide insight into the potential relationship between molecular biomarkers and conventional cardiovascular and renal risk factors.

Investigation of the BRCA1 and SENP1/SENP2 pathways may provide additional insight into the interconnected pathophysiological mechanisms underlying breast cancer, atherosclerotic cardiovascular disease, and CKD. Determining the potential diagnostic and prognostic value of these biomarkers may contribute to the early identification of high-risk patients, more precise monitoring of disease progression, and the development of individualized preventive and therapeutic strategies. Further investigation is warranted to establish the clinical applicability of these biomarkers and their role in risk stratification and longitudinal patient management.

Keywords: Chronic Kidney Disease, Atherosclerosis, Coronary Artery Disease, BRCA1, SENP1, SENP2, eGFR, Cardiovascular Disease.

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CARDIAC ARREST MANAGEMENT ALGORITHM ACCORDING TO THE 2025 AMERICAN HEART ASSOCIATION UPDATE

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Background:

Cardiac arrest remains one of the most critical medical emergencies and is associated with high mortality despite advances in resuscitation medicine. Early recognition, immediate initiation of high-quality cardiopulmonary resuscitation (CPR), rapid defibrillation when indicated, and effective advanced life support (ALS) are essential components of successful resuscitation. A standardized and clearly structured cardiac arrest management algorithm facilitates rapid decision-making and improves coordination among emergency medical teams.

Aim:

To present a structured cardiac arrest management algorithm based on contemporary principles of basic life support (BLS), advanced life support (ALS), and evidence-based resuscitation practice, with emphasis on early interventions and effective team coordination.

Methods:

A narrative analysis of contemporary international resuscitation guidelines and evidence-based recommendations was performed. The proposed algorithm integrates systematic assessment of unresponsiveness and abnormal breathing, immediate activation of emergency response, initiation of high-quality CPR, rhythm assessment, early defibrillation for shockable rhythms, intravenous or intraosseous access, administration of recommended pharmacological therapy, airway and ventilation management, and identification and treatment of reversible causes of cardiac arrest. Particular attention was given to minimizing interruptions in chest compressions and establishing clear role allocation within the resuscitation team.

Results:

The structured algorithm provides a sequential approach to cardiac arrest management and supports rapid identification of shockable and non-shockable rhythms. Integration of early CPR, timely defibrillation, effective airway and ventilation management, appropriate medication administration, and systematic assessment of reversible causes may improve the efficiency and

quality of resuscitation. Standardized team communication and predefined clinical roles may further reduce delays and procedural errors during high-stress resuscitation situations.

Conclusion:

A standardized cardiac arrest management algorithm is an essential component of effective emergency and prehospital care. Its implementation, combined with regular simulation-based training and continuous assessment of resuscitation performance, can improve adherence to evidence-based practice, team coordination, and the quality of CPR. Further evaluation of algorithm implementation in real-world emergency medical settings may help identify opportunities for improving cardiac arrest outcomes.

Keywords: Cardiac arrest; Cardiopulmonary resuscitation; Advanced life support; Defibrillation; Emergency medicine

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FEATURES OF MYOCARDIAL INFARCTION MANAGEMENT IN OLDER ADULTS

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Managing myocardial infarction in older adults (≥75–80 years) presents a complex clinical challenge due to age-related physiological changes, multimorbidity, renal impairment, and biological frailty. Older patients frequently present with atypical clinical features without classic chest pain, displaying instead shortness of breath, sudden weakness, syncope, or delirium, which delays prompt diagnosis and risk stratification.

Regarding revascularization strategies, primary percutaneous coronary intervention (PCI) remains the standard of care for ST-elevation myocardial infarction (STEMI). In non-ST-elevation myocardial infarction (NSTEMI), evidence from trials such as SENIOR-RITA, FIRE, and After Eighty indicates that an early invasive approach and complete physiology-guided revascularization significantly reduce recurrent ischemic events and urgent revascularizations in functionally active seniors. Conversely, in severely frail individuals with excessive comorbidities, conservative optimal medical therapy is preferred.

Pharmacotherapy requires balancing heightened ischemic and bleeding risks. Due to high bleeding risk (HBR), shortening dual antiplatelet therapy (DAPT) duration (1–3 or ≤6 months) or adopting a uniform de-escalation strategy (e.g., transitioning to clopidogrel) significantly decreases major bleeding complications. For patients requiring oral anticoagulation, registry and clinical trial data (PERSEO, AUGUSTUS, RE-DUAL PCI) demonstrate that dual antithrombotic therapy combining a direct oral anticoagulant (DOAC) with a P2Y12 inhibitor is substantially safer than prolonged triple antithrombotic therapy (TAT). Concomitant gastroprotection with proton pump inhibitors (PPIs) and dosage adjustment of secondary prevention drugs according to renal function (eGFR) are essential.

Ultimately, management must integrate comprehensive geriatric assessments and a multidisciplinary team approach to transition from a disease-centered model to a person-centered care pathway prioritized around quality of life.

Keywords: Myocardial infarction, Elderly population, Geriatric cardiology, Percutaneous coronary intervention (PCI), STEMI, NSTEMI, Dual antiplatelet therapy (DAPT), High bleeding risk (HBR), Frailty, Person-centered care

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MANAGEMENT OF MASSIVE ACETABULAR BONE DEFECTS IN REVISION HIP ARTHROPLASTY USING CUSTOM 3D-PRINTED IMPLANTS

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Background: In repeat revision hip arthroplasty, acetabular component loosening, wear-induced osteolysis, and metallosis may be associated with extensive bone loss. Insufficient remaining bone stock compromises structural support and makes stable fixation with standard revision components challenging.

Objective: To describe staged reconstruction of massive acetabular defects and the application of custom 3D-printed implants through two clinical cases.

Clinical Cases and Methods: Two cases are presented: a 34-year-old man and a 38-year-old woman with a history of hip arthroplasty and repeated revision procedures. Component loosening was accompanied by metallosis and massive acetabular bone defects. The first treatment stage involved implant removal, excision of metallosis-affected periprosthetic soft tissue and bone, and temporary placement of antibiotic-loaded bone cement within the defect. Definitive reconstruction was planned as a separate stage. Computed tomography and three-dimensional modelling were used to assess defect geometry and remaining bone stock, identify implant–bone contact areas, and plan component orientation, the hip centre of rotation, and screw fixation trajectories.

Reconstructive Principles: Patient-specific design allows the implant to accommodate the individual defect geometry and obtain fixation in better-preserved regions of host bone. The porous trabecular surface is intended to improve bone–implant interlock and, provided that reliable primary stability is achieved, support subsequent biological integration.

Conclusion: Custom 3D-printed acetabular implants offer a reconstructive option for complex massive defects when adequate fixation with conventional components is limited. Accurate preoperative planning, reliable support on remaining host bone, and conditions conducive to osseointegration are central to this approach. Further clinical and radiographic follow-up is required to assess long-term effectiveness.

Keywords: revision hip arthroplasty; acetabular bone defect; metallosis; custom implant; 3D printing.

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GASTROSCHISIS – AN OLD, NOT A NEW PROBLEM

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Background: Gastroschisis is a full-thickness paraumbilical abdominal wall defect with evisceration of bowel and no covering membrane. Its birth prevalence is approximately 2 to 4 per 10,000 births. After decades of steady increase, recent United States data show a significant decline from 2.86 to 1.55 per 10,000 live births between 2014 and 2022, largely explained by fewer births in the highest-risk maternal groups.

Aim: To summarize current evidence on the modern management and treatment of gastroschisis, including epidemiology, prenatal care, surgical techniques, and outcomes.

Methods: A narrative review of an evidence-based clinical reference (UpToDate, updated June 2026), together with systematic reviews, meta-analyses, and population-based studies published in peer-reviewed journals.

Results: Prenatal ultrasound detects more than 90% of cases. Delivery in a tertiary center with neonatal surgical capability is recommended, whereas the optimal timing of delivery remains debated and cesarean section is reserved for obstetric indications. Primary closure succeeds in about 70% of cases; staged silo closure and sutureless closure are the main alternatives. In a meta-analysis of 20 studies, primary closure appeared superior overall, whereas silo placement performed better in the studies with the least selection bias. A recent meta-analysis found that sutureless closure offers perioperative advantages but carries a higher risk of umbilical hernia. Survival of liveborn infants reaches 97.8% in a large North American cohort; however, survival to discharge was reported as 10%, 68%, and 98.6% in low-, middle-, and high-income countries, respectively. Complex gastroschisis (intestinal atresia, necrosis, perforation, or volvulus) affects up to 25% of patients, and its mortality was significantly higher than that of simple gastroschisis (16.67% versus 2.18%). Long-term intellectual outcomes are generally within the normal range, although adhesion-related problems and the absence of an umbilicus may affect survivors.

Conclusions: Modern management of gastroschisis is based on early prenatal diagnosis, planned delivery in a specialized center, an individualized surgical strategy, and multidisciplinary follow-up. Survival is excellent where quality neonatal surgical care is available, but the optimal timing

of delivery and closure technique remain unresolved, and complex gastroschisis continues to carry substantial morbidity.

Keywords: gastroschisis; abdominal wall defect; complex gastroschisis; closure techniques; pediatric surgery

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ABDOMINAL STEMI AND THE SPIKED HELMET SIGN: DIAGNOSTIC CHALLENGES IN CRITICAL CARE PATIENTS

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Introduction: Electrocardiographic (ECG) abnormalities, specifically ST-segment elevation, are traditionally diagnostic hallmarks of acute myocardial infarction (STEMI). However, non-cardiac conditions can mimic these manifestations, leading to diagnostic confusion. "Abdominal STEMI" refers to a rare clinical phenomenon where acute intra-abdominal pathologies simulate myocardial ischemia on an ECG. A key, high-acuity prognostic electrocardiographic marker associated with this presentation is the "Spiked Helmet Sign" (SHS), an artifactual waveform mimicking true ST-elevation. This study evaluates the clinical significance of abdominal STEMI and the SHS through an analysis of pathophysiological mechanisms and critical care case presentations.

Methodology: A comprehensive review was conducted on the underlying mechanisms of extra-cardiac ST-elevation and the clinical literature regarding SHS prevalence. Furthermore, two critical clinical cases were evaluated. Case 1 involved a 39-year-old male with multiple abdominal gunshot wounds and subsequent dynamic ileus exhibiting prominent SHS in leads V3–V6. Case 2 detailed a 59-year-old male post-abdominoplasty presenting with dynamic ileus and acute ST-segment elevations in inferior leads (II, III, aVF). Both patients underwent electrocardiographic monitoring, echocardiography, cardiac biomarker evaluations, and abdominal computed tomography (CT) scans to differentiate cardiac events from abdominal etiologies.

Results: In both clinical scenarios, echocardiographic assessments revealed preserved global left ventricular function (EF 58–60%) without regional wall motion abnormalities, and serial cardiac troponin tests remained negative. Pathophysiological evaluation confirmed that elevated intra-abdominal pressure and dynamic ileus caused mechanical diaphragmatic shifts, altering the cardiac axis and generating extra-cardiac signal artifacts. Gastrointestinal decompression via a nasogastric tube and targeted bowel stimulation achieved immediate resolution of the ECG

abnormalities. Literature analysis confirmed that 90% of mortality outcomes associated with SHS stem from severe non-cardiac systemic illnesses rather than true acute coronary occlusion.

Conclusion: The Spiked Helmet Sign and abdominal STEMI are critical ECG mimickers strongly tied to severe intra-abdominal pathologies like dynamic ileus rather than primary cardiac ischemia. Clinicians must recognize these atypical presentations in intensive care units to prevent unnecessary, potentially harmful invasive procedures like emergency coronary angiography. Continuous cardiac monitoring paired with immediate abdominal decompression remains the definitive diagnostic and therapeutic strategy for these high-risk patients.

Keywords: Abdominal STEMI, Spiked Helmet Sign, Dynamic Ileus, Electrocardiography Mimickers.

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BEYOND EMPIRICAL ANTIBIOTIC THERAPY: DIAGNOSTIC STEWARDSHIP, RAPID DIAGNOSTICS, AND TARGETED ANTIMICROBIAL THERAPY IN PRIMARY HEALTH CARE

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Background: Antimicrobial resistance (AMR) threatens patient safety and health-system sustainability worldwide. In 2021, bacterial AMR was associated with approximately 4.71 million deaths, including about 1.14 million deaths attributable to resistance. According to the WHO Global Antibiotic Resistance Surveillance Report 2025, approximately one in six laboratory-confirmed bacterial infections in 2023 was resistant to the antibiotics assessed. Primary care is a critical setting for intervention because a substantial proportion of antibiotic prescribing occurs in outpatient practice.

Objective: To examine contemporary diagnostic stewardship, explore its integration with antimicrobial stewardship, and propose evidence-informed, context-adapted interventions for Georgia's primary healthcare system.

Methods: This narrative, evidence-informed review draws on WHO diagnostic stewardship guidance and the AWaRe framework (2025–2026), the CDC outpatient antibiotic stewardship principles, NICE recommendations, and European surveillance approaches. It considers clinical risk stratification, targeted rapid diagnostics, local resistance data, and electronic clinical decision support.

Key findings and implications: Diagnostic stewardship emphasizes selecting the right test for the right patient at the right time and translating results into appropriate clinical action. Its aim is not increased testing, but testing that meaningfully changes management. In primary care, this can help reduce unnecessary antibiotic exposure without delaying recognition and treatment of severe infections. An integrated framework is proposed for Georgia, combining syndrome-specific clinical algorithms, targeted point-of-care diagnostics, AWaRe-based prescribing surveillance, documentation of indication and duration in electronic prescriptions, regional

antibiograms, audit and feedback, and continuing professional education. Phased implementation should incorporate balancing measures for patient safety.

Conclusion: Addressing AMR requires a shift from antibiotic selection alone toward diagnostic assessment, risk stratification, and evidence-based decisions. Integrating diagnostic and antimicrobial stewardship in Georgian primary care offers a measurable strategy to improve prescribing quality and patient safety. The future of antimicrobial stewardship begins before the antibiotic.

Keywords: antimicrobial resistance; diagnostic stewardship; antimicrobial stewardship; primary healthcare; rapid diagnostics; WHO AWaRe.

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NEW STRATEGIES OF PATIENT BLOOD MANAGEMENT FOR BEST ANESTHESIA PRACTICE IN ANEMIC PARTURIENTS

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Patient Blood Management (PBM) is a multidisciplinary, evidence-based approach focused on optimizing and preserving a patient's own blood to improve outcomes. Initially used in cardiac surgery to accommodate patients opting not to receive allogeneic blood transfusions. PBM has since expanded to broader at-risk populations due to increased awareness of transfusion-associated risks, such as adverse events, uncertain efficacy, cost and limited supply and access. The central aim in PBM is to conserve patients' own blood using timely medical and surgical interventions, tailored to patient-specific needs and guided by the three pillars of PBM.

PBM with restrictive transfusion strategies yields similar or improved mortality rates compared with liberal strategies. PBM implementation has significantly reduced hospital mortality, morbidity, length of stay, infection rates, and healthcare costs. The World Health Organization (WHO) recognizes PBM for anemic parturients in obstetrics as standard care and advocates national PBM policies to prevent anemia, coagulopathy, bleeding, and thrombosis.

There is an urgent need for PBM implementation in obstetrics for postpartum hemorrhage; its application is associated with improvements in patient outcomes. Despite increasing awareness of postpartum hemorrhage risk factors and the availability of risk assessment tools, it can be difficult to identify women at risk of developing postpartum hemorrhage. About 40% of women who experience postpartum hemorrhage are underestimated as "low risk" during pregnancy. To aid the uptake of PBM strategies in obstetrics, we developed an algorithm for management of anemia in pregnancy and created a quick reference chart for PBM strategies that can be employed in postpartum hemorrhage scenarios.

Keywords: Patient Blood Management (PBM), anemia in pregnancy, postpartum hemorrhage, restrictive transfusion strategies, obstetric anesthesia, blood transfusion.

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CEFEPIME/ZIDEBACTAM: A NOVEL STRATEGY AGAINST MULTIDRUG-RESISTANT GRAM-NEGATIVE INFECTIONS AND ITS POTENTIAL RELEVANCE TO SEPSIS

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Background: Sepsis is life-threatening organ dysfunction caused by a dysregulated host response to infection. Antimicrobial resistance, particularly among Gram-negative pathogens, complicates timely effective treatment and increases the risk of treatment failure. Although established antibiotics remain essential, resistance mechanisms can limit the activity of existing agents, creating a need for new therapeutic strategies.

Objective: To summarize the rationale, mechanisms of action, and available clinical evidence for cefepime/zidebactam, and to assess the limits of current evidence regarding its potential relevance to sepsis and septic shock.

Methods: A focused narrative review was conducted of regulatory information, clinical-trial findings, and published descriptions of the combination's microbiological and pharmacological properties.

Results: Cefepime is a fourth-generation cephalosporin that primarily targets penicillin-binding protein 3 (PBP3). Zidebactam is a non-β-lactam antibacterial agent that targets PBP2 and inhibits selected β-lactamases. Their complementary activity can enhance bacterial killing and retain in-vitro activity against certain difficult-to-treat Gram-negative organisms, including some isolates carrying carbapenemases; activity is not universal and susceptibility testing remains essential. In the phase III ENHANCE-1 trial of adults with complicated urinary tract infection, including pyelonephritis, the composite clinical and microbiological response was 89.0% (250/281) with cefepime/zidebactam versus 68.4% (93/136) with meropenem at the test-of-cure visit. On 29 May 2026, the US Food and Drug Administration approved the combination for adults with complicated urinary tract infections, including pyelonephritis, caused by designated susceptible organisms. This approval does not establish an indication for sepsis or septic shock.

Conclusion: Cefepime/zidebactam is an important addition to the evolving antimicrobial-resistance landscape, combining established β-lactam therapy with a complementary PBP-targeting mechanism. The phase III findings support its approved use in specified complicated urinary tract infections. Further dedicated clinical evidence is needed before its efficacy in sepsis and septic shock can be concluded. In critically ill patients, treatment decisions should integrate prompt appropriate therapy, source control, microbiological results, local resistance patterns, and applicable prescribing guidance.

Keywords: Cefepime/zidebactam; antimicrobial resistance; Gram-negative bacteria; sepsis; septic shock.

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A RARE COMPLICATION OF EPSTEIN-BARR VIRUS: CLINICAL CASE DISCUSSION

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Introduction

Epstein–Barr virus (EBV) infection is usually mild to moderate in severity and is characterized by fever, lymphadenopathy, and hepatosplenomegaly. However, in rare cases, it may lead to various severe complications. One such complication is macrophage activation syndrome (MAS), a life-threatening condition that requires early diagnosis and aggressive immunosuppressive therapy. EBV-associated MAS is particularly important in children and adolescents, as its clinical presentation may include acute liver injury, pancytopenia, and polyserositis, posing significant diagnostic challenges.

Case Presentation

A 14-year-old boy initially presented with fever and sore throat. One week later, his condition deteriorated, prompting admission to a hospital. Investigations confirmed EBV infection, with positive EBV viral capsid antigen (VCA) IgM antibodies. Following intravenous administration of dexamethasone and fluid therapy, the patient's condition stabilized temporarily. Four days later, he developed jaundice of the skin and mucous membranes, persistent spiking fever, and severe generalized weakness. On day 11 of the illness, he developed signs of acute liver failure, including grade I hepatic encephalopathy, manifested by disorientation, slowed thinking, and impaired concentration. Severe hyponatremia and polydipsia were also observed, with fluid intake reaching up to 6 liters per day. The patient was admitted to the pediatric intensive care unit. On physical examination and imaging, polyserositis was identified, with fluid accumulation in the pleural and pericardial cavities and the pelvis. Hepatosplenomegaly was also present. Laboratory investigations revealed pancytopenia, anemia, and markedly elevated liver function tests. Viral hepatitis and leptospirosis were excluded. Repeat testing demonstrated a markedly elevated EBV VCA IgM level (>160). On day 15 of the illness, the patient developed an extensive maculopapular rash involving the abdomen and back, which subsequently spread to the extremities. Petechiae were also noted on the lower extremities. Based on the clinical presentation and laboratory findings, the condition was assessed as macrophage activation syndrome (MAS) associated with EBV infection.

Pulse therapy with intravenous methylprednisolone (Solu-Medrol) at a dose of 1,000 mg daily was administered for three consecutive days, followed by a gradual dose reduction until completion of the treatment course. Concomitant antiviral therapy and hepatoprotective treatment were also provided. The patient's clinical condition improved significantly following treatment.

Conclusion

This case highlights a rare but life-threatening complication of EBV infection: macrophage activation syndrome (MAS), which may present with acute liver failure, pancytopenia, and polyserositis. In patients with severe or atypical disease progression, early suspicion of MAS is essential. Timely diagnosis and appropriate treatment may substantially improve clinical outcomes.

Keywords: Epstein–Barr virus, Pulse therapy, antiviral therapy, pediatric patient, intravenous methylprednisolone.

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DIAGNOSIS AND MANAGEMENT OF CONGENITAL HIV INFECTION IN INFANTS

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Background: Perinatally acquired Human Immunodeficiency Virus (HIV) infection in infants can present with aggressive opportunistic infections and refractory respiratory failure. Initial screening relies heavily on rapid antibody tests due to their affordability and rapid results (15–20 minutes), compared to Polymerase Chain Reaction (PCR) testing, which requires specialized laboratory facilities and several days. However, in severely immunocompromised infants, antibody production may be lacking, leading to false-negative rapid test results and significant diagnostic delays.

Case Presentation: A 3.5-month-old infant was admitted to the Pediatric Intensive Care Unit with severe acute respiratory failure secondary to pneumonia (SpO_2 84% on room air). Due to progressive clinical deterioration and severe mixed acidosis, the patient was intubated and mechanically ventilated for Acute Respiratory Distress Syndrome (ARDS). The clinical course was complicated by persistent pancytopenia and generalized edema. Initial rapid HIV antibody screening was performed twice and yielded negative results; Additionally, the mother categorically denied any maternal HIV diagnosis or risk factors. Consequently, primary immunodeficiency and multi-drug resistant bacterial/fungal infections were suspected. Broad-spectrum antimicrobials, IVIG, and Valganciclovir (for positive CMV PCR in blood and urine) were administered. Following successful extubation, the infant remained oxygen-dependent with recurrent febrile episodes. Definitive testing via HIV PCR confirmed HIV infection. Subsequent maternal testing following the infant's diagnosis confirmed previously undiagnosed maternal HIV infection.

Conclusions: A negative rapid HIV test and maternal denial do not rule out HIV in infants with profound immune collapse. In infants presenting with refractory ARDS, pancytopenia, and opportunistic infections such as CMV, rapid antibody tests can be falsely negative. Early direct HIV PCR testing is imperative for timely diagnosis and life-saving antiretroviral therapy.

Keywords: Pediatric HIV infection, False-negative rapid HIV test, Acute Respiratory Distress Syndrome (ARDS), Severe acute respiratory failure, Opportunistic infection

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EPIDEMIOLOGICAL TRENDS AND CLINICAL MANAGEMENT OF SUBDURAL HEMATOMA: GLOBAL AND LOCAL PERSPECTIVES

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Subdural hematoma (SDH) represents one of the most common and critical pathologies in neurosurgical practice, characterized by high morbidity and mortality rates. According to global epidemiological data, the rising trend of chronic subdural hematoma in the aging population is particularly acute, primarily associated with global demographic aging and the widespread use of anticoagulant and antiplatelet therapy. This trend is fully reflected in the clinical reality of Georgia, where the incidence of subdural hematoma cases and the need for diagnostic interventions are increasing annually. This paper reviews the epidemiological dynamics of subdural hematoma at global and local levels, along with risk factors and modern management protocols. Alongside the theoretical review, an interesting clinical case is presented, where a patient presenting with acute neurological deficit underwent emergency surgical intervention, leading to a successful clinical outcome. This case further emphasizes the crucial role of early diagnosis, proper triage, and timely operative intervention in patient survival and functional recovery.

Keywords: Subdural Hematoma, Epidemiology, Neurosurgery, Emergency Surgery, Georgia.

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ENDOTHELIAL GLYCOCALYX PROTECTION IN MODERN ANESTHESIOLOGY: FROM BASIC SCIENCE TO CLINICAL PRACTICE

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Background: The endothelial glycocalyx (EG) is a dynamic layer covering the luminal surface of vascular endothelial cells and plays a central role in vascular permeability, mechanotransduction, inflammation, coagulation, and microcirculatory homeostasis. Contemporary understanding of the EG has contributed to a revised interpretation of the classical Starling principle and has highlighted its importance in perioperative fluid distribution and endothelial barrier function.
Objective: To summarize the current understanding of endothelial glycocalyx biology and injury and to examine its implications for perioperative anesthetic management and potential protective strategies.
Methods: A focused narrative synthesis was performed based on three reviews addressing the basic science and clinical implications of the endothelial glycocalyx, the effects of anesthetic drugs and techniques, and the emerging role of glycocalyx preservation in perioperative medicine. Particular attention was given to mechanisms of glycocalyx degradation, fluid management, ischemia–reperfusion injury, inflammation, metabolic stress, and anesthetic-related effects.
Results: Perioperative glycocalyx injury is a multifactorial process associated with surgical trauma, inflammation, ischemia–reperfusion, hyperglycemia, oxidative stress, and mechanical or hemodynamic disturbances. Glycocalyx degradation may increase endothelial permeability, promote interstitial fluid accumulation, impair microcirculatory function, and contribute to postoperative organ dysfunction. From an anesthesiological perspective, preservation of adequate intravascular volume while avoiding both hypovolemia and unnecessary hypervolemia represents an important physiological principle. The available literature also suggests that anesthetic drugs and techniques may influence glycocalyx integrity; however, clinical evidence remains heterogeneous and insufficient to establish a specific anesthetic technique as universally glycocalyx-protective. Potential therapeutic approaches, including albumin, fresh frozen plasma,

sphingosine-1-phosphate–related pathways, and pharmacological modulation of endothelial injury, remain areas of active investigation.

Conclusion: Endothelial glycocalyx preservation represents an emerging concept linking vascular biology with modern perioperative anesthesiology. Current evidence supports a multifactorial approach focused on maintaining normovolemia, adequate tissue perfusion, minimizing inflammatory and ischemia–reperfusion insults, and avoiding unnecessary fluid administration. Further prospective clinical studies are required to determine whether glycocalyx-targeted interventions can improve patient outcomes and to establish clinically applicable strategies for endothelial protection.

Key words: endothelial glycocalyx; perioperative medicine; anesthesia; fluid management; endothelial protection

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RATIONAL CHOICE OF ANTICOAGULANTS IN EMERGENCY MEDICINE

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The question of how to rationally select anticoagulants in an emergency department setting is highly complex. Factors influencing the choice of medication include both patient-related variables (such as the specific medical condition or surgical status) and characteristics of the anticoagulant itself (whether it acts directly or indirectly). Another critical consideration is the speed with which the anticoagulation effect can be reversed. Gastroparesis, ileus, continuous enteral feeding, and shock-induced splanchnic hypoperfusion drastically alter oral drug absorption. Consequently, parenteral anticoagulants are the agents of choice in the emergency department. On the other side uunfractionated Heparin (UFH) and Low-Molecular-Weight Heparin (LMWH) possess no intrinsic anticoagulant activity; they function as catalysts by accelerating antithrombin III (ATIII) activity. In view of this, monitoring of AT III levels should be performed. In hemodynamically unstable patients receiving high-dose vasopressors, absorption of subcutaneous LMWH can be highly erratic. Continuous intravenous (IV) UFH is often preferred for therapeutic anticoagulation because it bypasses the skin entirely. The use of IVUFH should be reserved for specific patient cohorts where the benefit of IV UFH outweighs the additional risks: patients with excessively high and excessively low body weight, severe renal failure. Another factor in favor of the short-term use of unfractionated heparin (UFH) in the emergency department is the well-established approach for reversing excessive hypocoagulation (using protamine sulfate).

Another issue in clinical pharmacology that remains not fully resolved is the prescription of anticoagulants to patients undergoing chronic hemodialysis (end-stage chronic kidney disease, CKD-5) who also have permanent atrial fibrillation (AF); this represents one of the most complex and controversial challenges. The fundamental dilemma is that dialysis patients face a critically elevated risk of both ischemic stroke and severe bleeding (due to uremic platelet dysfunction). For such patients Warfarin remains mandatory only in the presence of mechanical heart valve prostheses or moderate-to-severe mitral stenosis. Warfarin blocks the γ-carboxylation of matrix

Gla protein (MGP) – a potent inhibitor of vascular calcification. This sharply accelerates arterial calcification and can lead to the life-threatening condition known as calcific uremic arteriolopathy (calciphylaxis), as well as accelerate the deterioration of heart valves. In patients with AF undergoing hemodialysis who have a low to moderate thromboembolic risk (or an extremely high risk of bleeding), a strategy of completely avoiding oral anticoagulants (OACs) is justified.

Thus, the choice of anticoagulants in the emergency department should be individualized.

Keywords: anticoagulants, safety, efficacy

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SIMILARITIES AND DIVERGENCES IN SEPSIS INDUCED BY GRAM-POSITIVE AND GRAM-NEGATIVE BACTEREMIA: A COMPARATIVE ANALYSIS

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Introduction: Sepsis represents a life-threatening organ dysfunction precipitated by a dysregulated host immune response to an infectious insult. The etiologic agents encompass both Gram-positive (G^+) and Gram-negative (G^-) bacteria. Although syndromes induced by G^+ and G^- bacteremia are frequently conceptualized as identical nosological entities in clinical practice—warranting a uniform empirical therapeutic regimen during the hyperacute phase—contemporary molecular and epidemiological investigations underscore their fundamental structural and immunopathological heterogeneity. Grounded in recent evidence-based clinical data, this study aims to systemize the pathophysiological similarities and distinct divergences between these two pathogenic cohorts.

Methodology: A retrospective analysis was conducted utilizing datasets from multicenter clinical trials and large-scale meta-analyses. The evaluation focused on the inflammatory mediator profiles, hemodynamic instability, the severity of organ dysfunction, and clinical outcomes characteristic of both Gram-positive and Gram-negative sepsis.

Results (Divergences): Initiation of the pathophysiological cascade demonstrates strict receptor specificity. The cell wall component of G^- pathogens, lipopolysaccharide (LPS/endotoxin), interacts directly with Toll-like Receptor 4 (TLR4), provoking markedly elevated serum concentrations of acute-phase reactants—specifically procalcitonin (PCT) and C-reactive protein (CRP)—compared to G^+ encounters. Regarding clinical severity, G^- bacteremia is independently associated with a significantly higher risk of developing severe sepsis and septic shock (OR: 1.73). Anatomically, the primary infectious foci differ: G^- strains are predominantly implicated in pneumonia, intra-abdominal, and urogenital infections, whereas G^+ pathogens correlate heavily with cutaneous, soft tissue, and intravascular catheter-related infections (mediated via TLR2/TLR6 activation or superantigens).

Results (Similarities): Despite the divergence in the initial magnitude of the immunological cascade, large-scale clinical validation confirms that patient-centered definitive outcomes demonstrate no statistically significant difference ($p > 0.05$). The composite 28-day mortality rate

is identical between the two groups (OR: 0.95). Furthermore, the overall hospital and Intensive Care Unit (ICU) length of stay, leukocyte profile dynamics, and the relative risks of developing systemic coagulopathy (characterized by D-dimer elevations, APTT prolongation, and thrombocytopenia) remain uniform across both cohorts.

Conclusion: Although Gram-negative sepsis is characterized by a more aggressive initial clinico-laboratory presentation and profound endotoxemia, the long-term prognosis and lethal outcomes are proportional to Gram-positive sepsis. These findings highlight the critical imperative for early multiplex molecular diagnostics and the timely optimization of etiopathogen-targeted antimicrobial therapy.

Keywords: Bacteremia, Infectious Focus, Lipopolysaccharide, Procalcitonin, Sepsis, Clinical Outcome

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DELIRIUM IN THE ICU: PREVALENCE, RISK FACTORS AND CLINICAL OUTCOMES

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Delirium is a common yet underdiagnosed form of acute brain dysfunction occurring in critically ill patients admitted to the intensive care unit (ICU). It is characterized by an acute onset of cognitive impairment, altered mental status, and fluctuating attention. Delirium is strongly associated with increased short- and long-term mortality, prolonged mechanical ventilation, extended ICU and hospital stay, and persistent post-discharge cognitive decline. The aim of this study is to evaluate the incidence of delirium in ICU patients, identify major modifiable and non-modifiable risk factors, and assess the clinical impact of routine screening protocols.

A comprehensive literature review was conducted to evaluate the global incidence of delirium in ICU patients. International screening protocols using the Confusion Assessment Method for the Intensive Care Unit (CAM-ICU) were analyzed. Demographic data, severity of illness scores, mechanical ventilation duration, exposure to sedative agents (particularly benzodiazepines and opioids), and environmental variables such as sleep deprivation were analyzed as potential risk factors.

The results demonstrated a high prevalence of delirium among ICU patients, with hypoactive delirium being the most frequent and frequently undetected subtype. Prolonged use of deep sedation and invasive mechanical ventilation were identified as significant modifiable risk factors. Patients who developed delirium experienced a statistically significant increase in ICU length of stay and higher rates of post-ICU cognitive complications compared to non-delirious patients.

In conclusion, delirium remains a major critical care challenge with profound clinical consequences. Standardized daily screening using tools like the CAM-ICU, combined with light sedation protocols, early mobilization, and non-pharmacological interventions, is essential for early recognition, prevention, and improving patient outcomes.

Keywords: Delirium, Intensive care unit, CAM-ICU, Risk factors, Prevention.

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NEUTROPHIL-LYMPHOCYTE RATIO IN SURGICAL PATIENTS WITH NEONATAL SEPSIS

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Background: Neonatal sepsis is a leading cause of mortality among newborns; approximately 2–2.5% of newborns develop sepsis, with a mortality rate ranging from 11% to 19%. Early diagnosis and treatment of neonatal sepsis help prevent severe, life-threatening complications and, consequently, reduce mortality. Sepsis is a systemic inflammatory response syndrome triggered by an infection; neutrophils and lymphocytes play a crucial role in the immune system's defense against infection. Clinical studies have demonstrated that the neutrophil-to-lymphocyte ratio (NLR) serves as a prognostic indicator for sepsis. Furthermore, the NLR is considered a more significant marker than the absolute counts of neutrophils or lymphocytes alone, as it incorporates data from both cell types. Numerous epidemiological and meta-analysis studies have shown that the NLR can be a useful prognostic indicator for sepsis, and that patients with high NLR levels may be at a higher risk of an unfavorable outcome.

Case presentation: Most studies regarding the relationship between the Neutrophil-to-Lymphocyte Ratio (NLR) and sepsis have been conducted in adults. Therefore, we decided to conduct a study involving patients with neonatal sepsis who underwent surgery for abdominal pathology. Our findings indicate that patients who exhibited a high NLR during the first days of life faced a greater risk of adverse outcomes and subsequent sepsis-related complications. Consequently, we believe that the NLR should be determined during every routine blood analysis in newborns; this process is non-invasive—posing virtually no risk of iatrogenic anemia—and requires no additional human or material resources.

Conclusion: The NLR, calculated based on a complete blood count, can serve as a simple and relatively inexpensive alternative marker for neonatal sepsis—particularly in developing countries. Sepsis caused by microbial infection can lead to an increase in the neutrophil count and a decrease in the lymphocyte count, suggesting that patients with sepsis may exhibit higher NLR levels.

Keywords: The neutrophil-to-lymphocyte ratio, Newborn, Neonatal sepsis, Abdominal pathologies

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ACUTE KIDNEY INJURY OF UNDETERMINED ETIOLOGY AND ITS MANAGEMENT WITH RENAL REPLACEMENT THERAPY: A CASE REPORT

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Acute kidney injury (AKI KDIGO Stage 3) is a critical nephrological condition. While the underlying etiology is being investigated, the timely initiation of renal replacement therapy (RRT) is paramount in the presence of oliguria and fluid overload. A 44-year-old male presented to the Emergency Department with a 5-day history of fever (38.6°C), vomiting, and diarrhea. Initial laboratory findings revealed a marked inflammatory response (CRP: 357.5 mg/L, WBC: 14.78 × 10^9/L), elevated baseline creatinine (165.3 μmol/L), proteinuria (3.0 g/L), and hematuria. Within 48 hours, renal function deteriorated rapidly: the patient developed oliguria, serum creatinine surged to 623.6 μmol/L, BUN reached 59.32 mg/dL, and LDH rose to 534 U/L. Renal ultrasonography ruled out obstructive uropathy. Urinalysis demonstrated abundant urate crystals and an elevated protein-to-creatinine ratio (PCR: 0.589 mg/mg). Given the combination of severe AKI, elevated inflammatory markers, and high LDH, samples were sent to the Lugar National Laboratory to investigate potential etiologies, including rhabdomyolysis and rare or specific infectious agents. The primary underlying etiology remains under active clinical and laboratory investigation. Due to progressive azotemia and fluid overload (EchoCG showing IVC 29 mm, EF 40%), a 12 Fr hemodialysis catheter was inserted into the right internal jugular vein, and emergency hemodialysis was initiated. Following the initiation of RRT and comprehensive supportive care, significant clinical and laboratory improvement was achieved: azotemia decreased, fluid overload was corrected, and CRP levels markedly declined to 81.5 mg/L (WBC: 14.03 × 10^9/L). This case highlights that even while the primary underlying etiology is still being determined, the prompt initiation of renal replacement therapy (RRT) in severe AKI is crucial for restoring homeostasis and stabilizing the patient.

Keywords: Acute Kidney Injury, Hemodialysis, Renal Replacement Therapy, Oliguria, Case Report.

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CORTICOSTEROIDS IN SEPSIS-ASSOCIATED ACUTE RESPIRATORY DISTRESS SYNDROME

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Sepsis-associated acute respiratory distress syndrome (SA-ARDS) is a severe pulmonary complication of sepsis characterized by dysregulated systemic and pulmonary inflammation, disruption of the endothelial and alveolar epithelial barriers, increased pulmonary capillary permeability, and diffuse alveolar damage. These pathophysiological processes contribute to non-cardiogenic pulmonary edema, severe impairment of gas exchange, and hypoxemia.

Given their potent anti-inflammatory and immunomodulatory effects, corticosteroids have a strong pathophysiological rationale in the management of SA-ARDS. Through binding to the glucocorticoid receptor, corticosteroids regulate gene transcription, suppress NF-κB- and AP-1-mediated pro-inflammatory signaling pathways, and reduce the production of inflammatory mediators. These effects may attenuate alveolar–capillary barrier injury, improve oxygenation and lung compliance, and shorten the duration of mechanical ventilation. However, physiological improvement does not necessarily translate into a survival benefit.

Corticosteroids differ substantially in their glucocorticoid and mineralocorticoid activity, duration of action, and clinical context of use. Hydrocortisone is commonly administered in septic shock to support hemodynamic stabilization; methylprednisolone has been extensively investigated in early and persistent ARDS because of its potent glucocorticoid and anti-inflammatory activity; and dexamethasone, with its high glucocorticoid potency, prolonged biological activity, and minimal mineralocorticoid effect, has demonstrated favorable outcomes in selected patients with moderate-to-severe ARDS. These pharmacological and clinical differences suggest that corticosteroids should not necessarily be considered interchangeable, and assessment of corticosteroid therapy should account for the specific agent, dose, timing, duration, and clinical context.

Despite a clear biological rationale, clinical evidence specific to SA-ARDS remains limited. Heterogeneity among existing studies precludes definitive conclusions regarding the optimal corticosteroid agent, dose, timing of initiation, and duration of treatment. Future research should focus on well-designed studies specifically targeting SA-ARDS and on developing individualized corticosteroid strategies guided by patients' clinical and biological characteristics.

Keywords: sepsis-associated ARDS; corticosteroids; hydrocortisone; methylprednisolone; dexamethasone; alveolar–capillary barrier

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SURGICAL MANAGEMENT OF TRAUMATIC ACROMIOCLAVICULAR JOINT DISLOCATIONS

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Traumatic dislocation of the acromial end of the clavicle, commonly referred to as acromioclavicular (AC) joint dislocation, is a frequent shoulder injury accounting for approximately 9% to 12% of all shoulder girdle injuries in athletic and active populations. The injury typically results from a direct fall onto the lateral aspect of the shoulder, leading to disruption of the acromioclavicular and coracoclavicular (CC) ligaments. While low-grade dislocations (Rockwood types I and II) are managed non-operatively, high-grade traumatic dislocations (Rockwood types IV, V, and VI) almost universally require surgical repair. The optimal management strategy for type III dislocations remains debated in the literature.

This study evaluated the clinical, radiological, and functional outcomes of surgical fixation in 38 adult patients presenting with acute, high-grade traumatic AC joint dislocations (Rockwood types III to V) treated between 2022 and 2025. Patients underwent either coracoclavicular reconstruction using suture-button loop constructs or temporary stabilization using a clavicular hook plate. Radiographic assessments were performed pre-operatively, immediately post-operatively, and at final follow-up (minimum 12 months) to evaluate CC distance and joint alignment. Functional outcomes were measured using the Constant-Murley Score (CMS) and the Disabilities of the Arm, Shoulder and Hand (DASH) score.

At final follow-up, 86% of patients demonstrated good to excellent functional recovery, with mean Constant scores exceeding 88 points. Patients treated with dynamic suture-button fixation achieved early motion with low complication rates, whereas hook plate fixation effectively maintained reduction in severely unstable cases but required a secondary procedure for hardware removal. Complications observed included transient shoulder stiffness, loss of reduction, and mild post-traumatic osteoarthritis in a minor subset of cases.

In conclusion, anatomical restoration and stable fixation of traumatic dislocations of the acromial end of the clavicle lead to favorable functional recovery and patient satisfaction. Early surgical

intervention combined with structured post-operative rehabilitation provides optimal outcomes in high-grade lesions, with technique selection tailored to patient age, activity level, and fracture-dislocation pattern.

Keywords: acromioclavicular dislocation, clavicle fracture, hook plate, ligament reconstruction, surgical outcomes.

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WHY DOES THE HEART STOP? BETWEEN PHYSIOLOGY AND ETERNITY: A QUESTION BEYOND CLINICAL PROTOCOLS

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Introduction: Cardiac arrest is a time-critical emergency characterized by the sudden loss of effective circulation. Beyond its pathophysiological mechanisms, it raises ethical and existential questions about human vulnerability, survival, and the responsibility of healthcare professionals.
Objective: To present an interdisciplinary perspective on cardiac arrest that integrates contemporary resuscitation principles with ethical reflection and the human significance of survival.
Materials and Methods: This narrative educational overview synthesizes the clinical themes presented in the accompanying lecture, including cardiac arrest rhythms, reversible causes, resuscitation priorities, bedside assessment, post-resuscitation care, and philosophical and ethical considerations. It is not an original clinical study or systematic review.
Results: The presentation distinguishes shockable rhythms (ventricular fibrillation and pulseless ventricular tachycardia) from non-shockable rhythms (pulseless electrical activity and asystole). It emphasizes early recognition, high-quality cardiopulmonary resuscitation, timely defibrillation when indicated, and concurrent investigation of reversible causes. Blood gas analysis, electrolytes, targeted toxicology, point-of-care ultrasonography, and capnography may inform clinical decisions without delaying chest compressions. Following return of spontaneous circulation, priorities include hemodynamic stabilization, appropriate oxygenation and ventilation, neurological assessment, and individualized care. The discussion further distinguishes restoration of circulation from meaningful recovery, highlighting neurological function, quality of life, patient dignity, and communication with families. Philosophical and theological interpretations are considered as perspectives on mortality rather than scientific explanations of cardiac arrest.

Conclusion: Effective cardiac arrest care requires both technical excellence and ethical judgment. A patient-centered approach recognizes that successful resuscitation cannot be reduced to restoration of a pulse: neurological and functional outcomes, compassion, and respect for human dignity remain central. Scientific evidence and existential reflection can inform the same clinical conversation while retaining their distinct boundaries.

Keywords: Cardiac arrest; Resuscitation; Intensive care; Medical ethics; Human dignity.

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SPECIAL CONSIDERATIONS FOR ANESTHETIC CARE DURING DENTAL PROCEDURES IN CHILDREN WITH DISABILITIES

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In modern dental practice, the administration of safe and effective anesthesia is essential, particularly given the expanding population of high-risk and medically vulnerable patients. Despite significant advancements in pharmacology and monitoring techniques, discrepancies persist across dental facilities regarding clinical decision-making, patient selection criteria, and standard safety practices. This study synthesizes updated clinical knowledge regarding local and general anesthesia in dentistry, focusing on novel techniques, pharmacological principles, perioperative challenges, and patient outcomes.

Pediatric Anesthesia & Clinical Challenges

In pediatric populations, dental procedures under general anesthesia are frequently required for children with comorbidities such as autism spectrum disorder (ASD), cerebral palsy, epilepsy, and congenital heart defects. General anesthesia is indicated when local anesthesia or conscious sedation fails—specifically in very young patients, individuals with disabilities, or those with severe dentophobia requiring extensive interventions. For many children with disabilities, single-session elective dental care under general anesthesia offers the safest comprehensive treatment option. Demonstrating this demand, 252 children underwent elective dental procedures under general anesthesia at the Givi Zhvania Pediatric Academic Clinic of TSMU in 2025.

Emergence from anesthesia represents a uniquely challenging and high-risk phase for children with ASD, often manifesting as severe behavioral agitation and emergence delirium (ED). Inhalation anesthetics, particularly sevoflurane, significantly elevate these risks due to three key factors:

1. High baseline preoperative anxiety, which inherently predisposes to emergence agitation;
2. Sensory overload upon awakening caused by bright lights, noise, and unfamiliar surroundings;
3. The child's internal difficulty in distinguishing physical pain from emotional fear.

Furthermore, approximately 50% of children with ASD develop long-term postoperative behavioral disturbances lasting weeks or months. These include sleep disruptions, dietary

alterations, heightened irritability, and specific phobias, such as "white coat" anxiety, driven by baseline sensory hypersensitivity and communication barriers.

Management Strategies & Recommendations

To mitigate perioperative risks and improve outcomes in vulnerable pediatric cohorts, targeted strategies must be implemented:

- Premedication: Utilizing intranasal combinations of dexmedetomidine and esketamine to reduce baseline anxiety.
- Anesthetic Technique: Minimizing inhalation agents by favoring Total Intravenous Anesthesia (TIVA) over volatile maintenance.
- Intraoperative Care: Administering alpha-2 agonists, propofol, or midazolam to prevent emergence agitation, along with adequate multimodal analgesia, antiemetics, and intravenous hydration.
- Environmental & Protocol Support: Creating low-sensory emergence environments with tactile soothing, alongside thorough preoperative psychological preparation, specialized staff training, and screening for drug interactions with long-term medications.

Advancements in anesthetic pharmacology and monitoring substantially enhance procedure safety. Standardizing clinical guidelines and integrating global best practices are essential to ensure consistent, high-quality anesthetic care for children with disabilities.

Keywords: Dental Anesthesia, Children with Disabilities, Autism Spectrum Disorder (ASD), General Anesthesia, Total Intravenous Anesthesia (TIVA), Dexmedetomidine.

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DIAGNOSTIC CHALLENGES AND CLINICAL COURSE OF SEPSIS IN IMMUNOCOMPROMISED PATIENTS

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Sepsis is a life-threatening condition caused by a dysregulated host response to infection. Immunocompromised patients represent a growing and heterogeneous population in the intensive care unit (ICU), in whom sepsis remains a major cause of morbidity and mortality.

Alterations in immune function can significantly modify the host response to infection and the clinical phenotype of sepsis. Consequently, immunocompromised patients may present with atypical symptoms and attenuated or modified cardinal signs of inflammation, making early recognition and diagnosis challenging.

Therefore, clinical decision-making should not rely on a single biomarker but rather on an integrated assessment of the overall clinical presentation, organ dysfunction, microbiological findings, imaging studies, and the patient's underlying immune status.

Immunocompromised patients have a higher risk of mortality than immunocompetent individuals, with neutropenia and specific patterns of immunodeficiency independently associated with increased short-term mortality.

Persistent inflammation, immunosuppression, and catabolism syndrome (PICS) represents a self-perpetuating cycle of persistent organ dysfunction, inflammation, and catabolism, resulting in sarcopenia and immune dysfunction that may predispose patients to recurrent infections, metabolic disturbances, and impaired bone marrow function.

A multimodal, timely, and personalized therapeutic approach addressing persistent inflammation, immunosuppression, and catabolism is needed for PICS in immunocompromised patients; however, optimal management remains an active area of research.

Therefore, early recognition of sepsis and timely initiation of appropriate antimicrobial therapy are crucial for improving clinical outcomes in immunocompromised patients.

Keywords: Sepsis, Immunocompromised patients, PICS, Organ dysfunction.

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NEONATAL RESUSCITATION IN THE NEONATAL INTENSIVE CARE UNIT

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Background: Newborns admitted to the neonatal intensive care unit (NICU) may experience acute deterioration due to respiratory failure, hypoxemia, bradycardia, or hemodynamic instability. Prompt recognition, systematic assessment, and coordinated intervention are essential to support safe and effective care.

Objective: To review key principles of neonatal resuscitation in the NICU in accordance with the Neonatal Resuscitation Program (NRP), 9th edition, with emphasis on early recognition of deterioration, respiratory support, structured troubleshooting, and team communication.

Educational approach: This educational presentation reviews a structured response to acute deterioration in critically ill newborns. It addresses rapid assessment and monitoring; evaluation of positive-pressure ventilation effectiveness; and the use of the DOPE mnemonic—displacement of the endotracheal tube, obstruction, pneumothorax, and equipment failure—to guide assessment of sudden deterioration in an intubated infant. The presentation also highlights escalation of respiratory and cardiovascular support, post-resuscitation stabilization, role clarity, and communication during emergencies. A clinical scenario is used to illustrate how a systematic approach can help organize assessment and guide timely, cause-directed intervention.

Conclusion: Applying NRP 9th-edition principles within NICU practice can support a consistent, structured approach to neonatal emergencies. Regular team training, clear communication, and post-event debriefing are important components of preparedness and continuous quality improvement. Clinical decisions should follow current guidelines and local institutional protocols.

Keywords: neonatal resuscitation; NRP; neonatal intensive care; ventilation; DOPE

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CONTEMPORARY APPROACHES TO THE DIAGNOSIS AND MANAGEMENT OF PULMONARY EMBOLISM

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Background: Pulmonary embolism (PE) is an acute cardiovascular condition with frequently nonspecific clinical manifestations that requires rapid, structured diagnostic and therapeutic decision-making. The 2026 multisociety AHA/ACC/ACCP/ACEP/CHEST guideline introduces a new A–E clinical classification of acute PE integrating symptoms, hemodynamic status, right ventricular dysfunction, and biomarkers to support more precise risk stratification and treatment selection.

Objective: To systematize contemporary evidence-based approaches to the diagnosis and management of PE and to develop effective educational strategies for their practical implementation.

Educational Strategy: The educational program is based on a stepwise clinical algorithm: (1) assessment of clinical suspicion and use of validated clinical prediction tools; (2) rational use of D-dimer according to pretest probability; (3) diagnostic confirmation with CT pulmonary angiography (CTPA), with ventilation/perfusion scanning in appropriate cases; (4) assessment of PE severity and early risk based on hemodynamic status, right ventricular function, and biomarkers; and (5) selection of indications for anticoagulation and reperfusion therapy. Teaching methods include case-based learning, clinical decision algorithms, simulation scenarios, and multidisciplinary discussion.

Key Issues: Contemporary diagnosis emphasizes pretest clinical risk assessment before diagnostic testing. Patients with a high clinical probability or a positive D-dimer require imaging, with CTPA serving as the principal imaging modality when confirmation is required. Anticoagulation remains the cornerstone of treatment. The 2026 guideline recommends low-molecular-weight heparin over unfractionated heparin when initial parenteral anticoagulation is required and favors direct oral anticoagulants (DOACs) over vitamin K antagonists in eligible patients without contraindications. After the initial 3–6 months, continuation of anticoagulation should be

individualized according to recurrence risk, provoking factors, and bleeding risk. In hemodynamically unstable patients, rapid reperfusion strategies—including systemic thrombolysis, catheter-based interventions, mechanical thrombectomy, or surgical embolectomy—may be considered according to clinical characteristics and bleeding risk. Pulmonary embolism response teams (PERTs) may facilitate timely multidisciplinary decision-making.

Conclusion: Contemporary PE management requires not only knowledge of diagnostic and therapeutic recommendations but also the ability to apply them systematically. Effective educational strategies should integrate clinical probability assessment, appropriate D-dimer use, CTPA-based diagnosis, dynamic risk stratification, and individualized selection of anticoagulant or reperfusion therapy. Case-based learning and simulation-based algorithms can support rapid and safe decision-making, particularly in high-risk PE. Structured follow-up is also important for timely recognition of persistent symptoms, functional limitation, and possible chronic thromboembolic disease.

Keywords: pulmonary embolism; risk stratification; anticoagulation; thrombolysis; educational strategy

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EPIDEMIOLOGY OF CRITICAL CONDITIONS AND INTENSIVE CARE OUTCOMES: A PUBLIC HEALTH PERSPECTIVE

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Critical conditions continue to place considerable demands on healthcare systems, often resulting in high mortality, serious complications, prolonged hospital stays, and increased healthcare expenditure. Despite advances in emergency medicine and intensive care, patient outcomes remain dependent on several factors, including the severity of illness, pre-existing health conditions, the timeliness of medical intervention, and the availability of healthcare resources. Examining these factors from an epidemiological and public health perspective is essential for understanding variations in outcomes and identifying opportunities to improve the quality of care.

A narrative literature review was conducted to examine scientific publications addressing critical care epidemiology, intensive care unit (ICU) outcomes, quality assessment, and population-level health interventions. The review drew on literature concerning ICU registries, outcome measurement, and the management of critically ill patients, alongside relevant resources published by the World Health Organization. Particular emphasis was placed on mortality, survival, length of hospital stay, complications, risk adjustment, and the analysis of routinely collected clinical data.

The reviewed literature indicates that reliable assessment of intensive care services depends on consistent data collection and the use of clearly defined outcome indicators. Although mortality and survival rates are important measures of performance, they should be interpreted in the context of patients' initial clinical condition, disease severity, and underlying comorbidities. Statistical methods, particularly multivariable and survival analyses, help identify factors associated with unfavorable outcomes and provide a stronger basis for evidence-informed healthcare decisions. Clinical registries also play an important role in monitoring trends, comparing institutional performance, and identifying areas requiring improvement. Beyond the clinical setting, early recognition of critical illness, timely emergency treatment, effective

infection prevention, and equitable access to healthcare remain essential components of efforts to improve patient outcomes.

Epidemiological analysis and biostatistical methods provide valuable tools for understanding the factors that influence intensive care outcomes and for informing healthcare planning. Strengthening clinical data collection, applying appropriate risk-adjustment methods, and developing reliable ICU registries should be considered important priorities. A broader public health perspective can also help identify preventable causes of critical illness, address inequalities in access to intensive care, and guide the allocation of limited healthcare resources more effectively.

Keywords: Critical care, Epidemiology, Biostatistics, Mortality, Public health

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GERIATRIC MEDICINE AND EMERGENCY CARE: A MODERN CONCEPT OF ASSESSMENT, MANAGEMENT, AND SAFETY OF THE OLDER PATIENTS

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The increasing proportion of older adults represents a major challenge for contemporary healthcare systems and requires closer integration of geriatric medicine with emergency care. Older patients frequently present to emergency departments with complex, multimorbid conditions, atypical clinical manifestations, polypharmacy, functional impairment, and an increased risk of adverse outcomes. Therefore, the assessment and management of geriatric patients require a comprehensive and individualized approach that extends beyond the diagnosis and treatment of an acute medical condition.

This abstract presents a modern conceptual framework for the assessment, management, and safety of older patients in emergency care. Particular attention is given to comprehensive geriatric assessment, including evaluation of acute symptoms, comorbidities, medication use, cognitive and functional status, mobility, nutritional condition, and social circumstances. Early recognition of potentially life-threatening conditions remains essential, while simultaneously considering age-related physiological changes that may modify the clinical presentation of acute disease.

Patient safety is a central component of emergency care for older adults. Prevention of falls, medication-related complications, delirium, functional deterioration, pressure injuries, dehydration, and inappropriate hospitalization should be incorporated into clinical decision-making. Effective communication with patients, family members, caregivers, and multidisciplinary healthcare professionals is also important for continuity of care and appropriate discharge planning.

A modern geriatric emergency-care model should therefore combine rapid identification and treatment of acute conditions with individualized risk assessment, functional preservation, medication review, and prevention of avoidable complications. Integration between emergency medicine, geriatrics, primary care, rehabilitation, nursing, and social services may contribute to safer and more coordinated care for older patients.

The proposed approach emphasizes that emergency care for older adults should not be limited to short-term stabilization. It should also address patient safety, preservation of functional

independence, appropriate transitions of care, and prevention of recurrent emergency presentations. This topic should be taken under consideration and plus more attention should be paid to atypical symptomatic manifestations of disorders within geriatric patients and also differential diagnosis. This integrated perspective may support the development of more effective and patient-centered models of geriatric emergency care.

Keywords: Geriatric medicine; emergency care; Older adults; Patient safety; Comprehensive assessment

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AI-AUGMENTED NUTRITION IN THE ICU

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Background: Nutritional requirements in critically ill patients fluctuate with inflammation, organ dysfunction, treatment and recovery. Conventional predictive equations and intermittent reassessment may fail to capture these changes, contributing to discrepancies between prescribed and delivered nutrition.

Objective: To examine the emerging applications of artificial intelligence (AI) in intensive care unit (ICU) nutrition, focusing on nutritional assessment, metabolic modeling, real-time personalization and prediction of feeding complications.

Evidence and Key Findings: AI-assisted assessment can integrate electronic health record data, laboratory results and physiological trends to identify nutritional risk dynamically rather than relying solely on admission scores. Machine-learning models combine clinical variables, ventilator data and, where available, indirect calorimetry to estimate energy expenditure; a comparative 2025 study reported lower estimation error with selected models than with conventional equations. Indirect calorimetry remains the reference method, and AI should complement rather than replace it. A proposed closed-loop approach links continuous monitoring, risk prediction, clinician-reviewed adjustment of nutritional prescriptions and reassessment. Predictive models have been developed for enteral feeding intolerance, diarrhea and underfeeding. The NutriSighT transformer model, for example, uses routinely collected ICU data to update underfeeding-risk predictions every four hours. Reinforcement-learning approaches such as DeepEN also illustrate the feasibility of generating individualized caloric, protein and fluid targets from retrospective ICU trajectories. However, most evidence concerns model performance rather than demonstrated improvements in clinical outcomes. Limitations include missing or inconsistent data, restricted external validation, workflow integration, alert fatigue, model generalizability and regulatory oversight.

Conclusions: AI offers a promising framework for more responsive and individualized ICU nutritional care, moving from static prescriptions toward anticipatory, data-informed support.

Prospective multicenter studies and interventional trials are needed to establish clinical benefit, safety and implementation feasibility. Clinician oversight remains essential.

Keywords: Artificial intelligence; Critical care nutrition; Machine learning; Personalized nutrition; Predictive modeling

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CRITICAL CARE NUTRITION IN 2026: WHAT THE EVIDENCE REALLY SUPPORTS

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Background: Nutritional support is a fundamental component of intensive care, yet optimal timing, energy delivery, protein dosing and route remain debated. Recent guideline revisions and randomized trials challenge traditional assumptions about early full feeding and high protein provision.

Objective: To critically synthesize contemporary evidence and translate the ESPEN 2023 and ASPEN 2022 recommendations into practical, individualized nutritional strategies for critically ill adults.

Evidence and Key Findings: Early enteral nutrition, generally initiated within 48 hours when feasible, remains preferred, but delivery should progress cautiously during the acute phase rather than immediately reaching full targets. Indirect calorimetry is the preferred method for estimating energy expenditure; ESPEN recommends hypocaloric feeding early, followed by progression toward 80–100% of measured expenditure after day three. The NUTRIREA-3 trial found no mortality advantage from standard versus low early calorie delivery in ventilated patients with shock. Protein should also be increased progressively, with ESPEN suggesting approximately 1.3 g/kg/day. The EFFORT Protein trial did not demonstrate an overall benefit from higher protein dosing and raised concerns in patients with acute kidney injury. Enteral versus parenteral feeding decisions should reflect gastrointestinal function, tolerance and individual risk, rather than rigid adherence to one route. Routine intravenous glutamine in unstable patients with multiorgan failure and high-dose antioxidants without established deficiency should be avoided. Safe implementation also requires glycaemic control, electrolyte surveillance, prevention of refeeding syndrome and regular assessment of actual nutritional delivery.

Conclusions: Modern critical care nutrition prioritizes individualized, progressive support over aggressive early targets. Integrating trial evidence with guideline recommendations, physiological monitoring and multidisciplinary reassessment may improve the safety and consistency of bedside practice.

Keywords: Critical care nutrition; Enteral nutrition; Protein delivery; Indirect calorimetry; Clinical guidelines

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THE FUTURE OF INTENSIVE CARE IN EUROPE: CHALLENGES, OPPORTUNITIES

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Background: Intensive care medicine in Europe faces a defining period of transformation. Increasing demand from ageing populations and complex disease, persistent workforce shortages, unequal access to critical care, and vulnerabilities exposed by the COVID-19 pandemic challenge the resilience of healthcare systems. At the same time, technological innovation, multinational research and stronger engagement with European institutions offer opportunities to reshape the specialty.

Objective: To identify the major challenges and emerging opportunities for European intensive care and outline a collaborative strategy for improving workforce sustainability, equitable access, clinical innovation and preparedness.

Key themes: A sustainable intensive care system depends on skilled multidisciplinary teams rather than physical bed capacity alone. Burnout, staff retention and variation in training and professional recognition require coordinated responses, including improved working conditions, team-based care and cross-border mobility. Geographic disparities in ICU capacity and access highlight the need for common standards and stronger European advocacy. Responsible adoption of artificial intelligence may improve risk prediction, clinical decision support and administrative efficiency, provided that implementation is clinically led, transparent and supported by appropriate training. Shared registries, interoperable data and multinational research networks can accelerate evidence generation while extending research participation to under-resourced settings. Environmental sustainability and preparedness for emerging infections, antimicrobial resistance, extreme weather and other crises must also become integral to ICU planning.

Conclusions: Collaboration is the essential mechanism for translating these opportunities into meaningful progress. European professional societies can unite clinicians around harmonised education, shared research infrastructure, workforce advocacy, sustainable practice and coordinated emergency preparedness. Building on experience from the pandemic, multinational studies and policy engagement, the future of European intensive care should prioritise people,

equitable access, responsible innovation and care extending beyond ICU survival. No single hospital or country can achieve these goals alone.

Keywords: Intensive care; European collaboration; Workforce sustainability; Health equity; Innovation

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POINT-OF-CARE TESTING IN THE ICU: CURRENT GAPS AND NEEDS

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Background: Point-of-care testing (POCT) in intensive care encompasses bedside laboratory diagnostics and point-of-care ultrasound (POCUS). Both offer rapid, repeatable information for managing shock, bleeding and respiratory failure, yet their clinical potential is constrained by fragmented implementation.

Objective: To identify shared gaps in ICU bedside diagnostics and outline priorities for integrating laboratory POCT and POCUS into precise, data-driven clinical workflows.

Key Themes: Five interrelated gaps are highlighted. First, diagnostic performance is affected by pre-analytical errors and assay limitations in laboratory POCT, and by operator dependence and qualitative interpretation in POCUS. Second, variable training, competency assessment and quality assurance undermine reproducibility. Third, incomplete electronic health record connectivity, manual transcription and inadequate image archiving prevent longitudinal analysis. Fourth, although diagnostic accuracy is extensively studied, evidence demonstrating improvements in patient outcomes and cost-effectiveness remains limited. Fifth, equipment costs, interoperability barriers and evolving European regulatory requirements complicate implementation. A proposed smart ICU workflow combines deterioration alerts, protocolised bedside laboratory testing and ultrasound, AI-assisted measurements, multimodal decision support, and documented reassessment after interventions. In shock, for example, serial lactate and blood-gas measurements can be integrated with quantitative cardiac and lung ultrasound and venous congestion assessment to guide individualised treatment.

Conclusions: Advancing POCT requires quantitative and interoperable tools, coordinated governance, structured education and certification, rigorous outcome-focused trials, and sustainable regulatory and funding pathways. The greatest opportunity lies not in faster isolated

tests, but in transforming bedside results and images into reliable, longitudinal clinical intelligence.

Keywords: Point-of-care testing; Critical care; Point-of-care ultrasound; Interoperability; Precision medicine

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CONTEMPORARY APPROACHES TO FLUID RESUSCITATION IN SEPTIC SHOCK: THE USE OF CRYSTALLOIDS AND COLLOIDS

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Introduction and Aim: Fluid resuscitation is an essential component of hemodynamic stabilization in septic shock. Crystalloids are the first-line fluids, while adjunctive Colloids (albumin) may be considered in selected patients, particularly when large volumes of crystalloids are required. This study aims to describe the clinical course associated with the combined use of crystalloids and albumin in a patient with severe hypoalbuminemia.

Case Presentation: A 73-year-old patient was admitted with acute intestinal obstruction caused by a colonic tumor and generalized peritonitis. The clinical presentation was complicated by septic shock, tissue hypoperfusion, and metabolic acidosis. Initial laboratory and clinical findings included a lactate level of 10.79 mmol/L, pH of 7.30, HCO_3^- of 10.0 mmol/L, heart rate of 137 beats/min, procalcitonin of 3.00 ng/mL, and peak C-reactive protein (CRP) concentration of 257 mg/L. Hypoalbuminemia (20 g/L) and hypoproteinemia (44 g/L) were also identified.

Treatment: Emergency laparotomy, hemicolectomy, and transverse colostomy were performed. Antimicrobial therapy with meropenem and vancomycin was initiated. Fluid therapy included Ringer's solution and 20% albumin (100 mL). Furosemide was administered to facilitate fluid balance management.

Results: Following comprehensive treatment, the lactate level decreased to 1.10–1.49 mmol/L, while CRP declined to 35 mg/L. The white blood cell count ranged from 7.40 to 10.58 × 10^9/L during subsequent monitoring. A negative daily fluid balance was achieved, ranging from –900 to –2030 mL. The creatinine level was 65.1 μmol/L, pH was 7.37, and peripheral oxygen saturation (SpO_2) ranged from 94% to 98%.

Conclusion: In this case, comprehensive treatment involving crystalloids, albumin, and fluid balance monitoring was associated with improvements in tissue perfusion and inflammatory markers. This case highlights the importance of individualized fluid resuscitation and hemodynamic monitoring in septic shock. However, a single clinical case does not allow conclusions to be drawn regarding the independent efficacy of albumin.

Keywords: Septic shock; Crystalloids; Albumin; Fluid resuscitation; Hypoalbuminemia.

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TRIGEMINAL NEURALGIA: EMERGENCY MANAGEMENT AND NEUROSURGICAL CONSIDERATIONS

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Trigeminal neuralgia (TN) is a severe neuropathic pain disorder characterized by recurrent, unilateral, brief, electric shock-like facial pain triggered by otherwise innocuous stimuli. Although TN is generally managed in outpatient settings, severe exacerbations may present to the emergency department as an acute pain crisis, with inability to eat, drink or take oral medication, resulting in dehydration and physical exhaustion. This review aims to develop an evidence-informed clinical framework for the emergency recognition, acute management, and appropriate neurosurgical referral of patients presenting with severe TN.

Classical TN is most commonly associated with neurovascular compression of the trigeminal nerve root entry zone, frequently involving the superior cerebellar artery. Focal demyelination and abnormal ectopic impulse transmission contribute to the characteristic paroxysmal pain. In the emergency department, recognition of the typical clinical phenotype is essential, while red flags - including young age at onset, bilateral symptoms, persistent facial sensory deficits, atypical pain characteristics, or additional cranial nerve abnormalities - should prompt evaluation for secondary causes such as multiple sclerosis or cerebellopontine angle lesions and consideration of neuroimaging.

The proposed emergency management framework emphasizes rapid clinical assessment, identification of complications, hydration when oral intake is compromised and targeted rescue therapy in severe pain exacerbations. Conventional analgesics are generally insufficient for TN-associated paroxysmal pain. In monitored settings, intravenous agents such as lidocaine or fosphenytoin may be considered for acute rescue treatment, followed by optimization of established oral therapy, particularly carbamazepine or oxcarbazepine, when appropriate. Following stabilization, patients with persistent or medically refractory symptoms should undergo neurological and neurosurgical assessment.

For classical TN refractory to medical therapy, microvascular decompression (MVD) through a retrosigmoid approach provides a definitive treatment option by addressing neurovascular compression while aiming to preserve trigeminal nerve function. Percutaneous ablative procedures and stereotactic radiosurgery may provide alternatives for selected patients, particularly those with increased surgical risk.

This framework highlights the importance of integrating emergency stabilization with early specialist decision-making. Prompt recognition of TN, exclusion of secondary pathology, appropriate acute treatment and timely neurosurgical referral may improve continuity of care and facilitate definitive management of medically refractory disease.

Keywords: Trigeminal neuralgia, acute pain crisis, emergency medicine, microvascular decompression, neurosurgery

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CUSHING'S TRIAD AS A CLINICAL INDICATOR OF IMPENDING BRAIN HERNIATION: DIAGNOSTIC VALUE AND EMERGENCY MANAGEMENT

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Background: Acute brain herniation is a life-threatening neurological emergency requiring immediate recognition and treatment. Cushing's triad, consisting of hypertension, bradycardia, and irregular respiration, is associated with critically increased intracranial pressure and possible brainstem compression. It is generally a late warning sign, and its absence does not exclude impending herniation.

Objective: To propose an educational strategy to improve emergency medicine trainees' recognition of Cushing's triad, understanding of its diagnostic limitations, and initial response to suspected brain herniation.

Methods: The proposed strategy integrates clinical reviews and emergency management guidelines. It uses a simulated emergency department scenario, interpretation of vital-sign trends, focused neurological assessment, and a structured response checklist. Learners identify changes in blood pressure, heart rate, respiration, consciousness, and pupillary responses, then prioritize stabilization, urgent specialist consultation, and definitive investigation.

Results: The proposed intervention aims to improve recognition of neurological deterioration before the complete triad develops, discourage reliance on a single clinical sign, and promote timely emergency action. Its effectiveness could be evaluated through pre- and post-session knowledge tests, simulation performance, and adherence to the response checklist. These outcomes have not yet been evaluated.

Conclusion: Cushing's triad is an important warning sign of critically elevated intracranial pressure, but waiting for all three components may delay intervention. Simulation-based education may help trainees recognize neurological deterioration, understand diagnostic limitations, and follow a structured emergency management approach. Prospective evaluation is needed to determine its educational effectiveness.

Keywords: Cushing's triad; brain herniation; intracranial pressure; emergency medicine; clinical education

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ODONTOGENIC CERVICAL NECROTIZING FASCIITIS: DIAGNOSIS AND MANAGEMENT

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Odontogenic cervical necrotizing fasciitis is a severe, rapidly progressive, and potentially life-threatening infection that can be fatal without timely intervention. Early diagnosis and prompt treatment are essential to improving the chances of survival, making awareness of its presentation critical for clinicians. We present the case of an 8-year-old paediatric patient with odontogenic cervical necrotizing fasciitis complicated by a carotid artery rupture and subsequent mediastinal hematoma formation. Despite the high risk of brain damage following the carotid artery rupture, the child maintained an adequate neurological status, which was possibly attributed to the presence of a congenital accessory right external carotid artery. Unfortunately, during the hematoma resorption phase, the patient developed hematoma-associated sepsis, which ultimately resulted in death. This case highlights the challenges of managing secondary vascular and infectious complications, as well as the unexpected protective role of vascular anomalies in cerebral perfusion during critical events.

Keywords: paediatric cervical necrotizing fasciitis, odontogenic infection, carotid artery rupture, mediastinal hematoma, accessory external carotid artery

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CHALLENGES OF SMITH-LEMLI-OPITZ SYNDROME IN THE NEONATAL INTENSIVE CARE UNIT: A CASE REPORT

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Background: Smith-Lemli-Opitz syndrome (SLOS) is a rare autosomal recessive genetic disorder caused by disrupted cholesterol biosynthesis, specifically a deficiency of the enzyme 7-dehydrocholesterol reductase (DHCR7), which converts 7-dehydrocholesterol (7DHC) to cholesterol. Multiple congenital anomalies, psychomotor developmental delay, and behavioral disturbances characterize SLOS.

Case presentation: A newborn delivered at 39 weeks of gestation presented with multiple dysmorphic features and congenital anomalies, including microcephaly, low-set ears, micrognathia, epicanthal folds, hypertelorism, syndactyly, hypospadias, unilateral cryptorchidism, a high-arched palate, a narrow forehead, ptosis, downturned corners of the mouth, thin lips, hypotonia, hyporeflexia, and constipation. On the 12th day of life, the infant developed projectile vomiting. Abdominal ultrasonography revealed pyloric stenosis, and laboratory investigations confirmed bacterial sepsis. Antibacterial therapy was initiated, and the patient underwent surgical treatment with pyloromyotomy. During follow-up, the vomiting resolved, along with the clinical and laboratory signs of infection. However, feeding intolerance and poor weight gain persisted. Genetic testing was subsequently performed using whole-exome sequencing (WES), which identified two pathogenic variants in the DHCR7 gene: c.278C>T, p.(Thr93Met), and c.964-1G>C, p.(?). These findings confirmed the diagnosis of Smith-Lemli-Opitz syndrome (SLOS). Smith-Lemli-Opitz syndrome is characterized by impaired cholesterol biosynthesis, resulting in low serum total cholesterol levels and elevated levels of 7-dehydrocholesterol (7-DHC). Following the diagnosis, in addition to a high-calorie diet, the patient was administered daily cholesterol supplementation at a dose of 4 g/day. Subsequently, the infant demonstrated weight gain and a relative improvement in feeding tolerance.

Conclusion: This case highlights the importance of considering Smith-Lemli-Opitz syndrome (SLOS) in the differential diagnosis of male newborns presenting with severe feeding difficulties accompanied by multiple dysmorphic features and congenital anomalies. Therefore, in infants with poor weight gain, assessment of total serum cholesterol and the lipid profile should be

considered, along with molecular genetic testing, which can help establish the underlying genetic cause of the clinical presentation and confirm the diagnosis.

Keywords: Smith-Lemli-Opitz syndrome; feeding intolerance; poor sucking; poor weight gain; total cholesterol; lipid profile.

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MEASLES-INDUCED SUBACUTE SCLEROSING PANENCEPHALITIS (DAWSON'S DISEASE): CLINICAL CHARACTERISTICS AND DIAGNOSTICS

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Introduction: Measles is characterized by high contagiousness. One of its rarest but most lethal complications is subacute sclerosing panencephalitis (SSPE), which primarily occurs in children and adolescents. The frequency among infected individuals is 1:10,000, while in vaccinated individuals, it is exceptionally rare (~1:500,000).

Pathogenesis and Course: The main feature of the disease is an atypically long, 6–15-year asymptomatic period between the contracted measles infection and the onset of panencephalitis. The persistence of the virus in neural tissues and the disruption of the immune response lead to progressively worsening psychoneurological damage. The clinical course includes 4 stages: behavioral changes and headaches, seizures, severe movement coordination disorders (ataxia, myoclonus), and coma caused by brainstem damage, leading to a fatal outcome (on average within 3 years).

Diagnostics: The diagnosis is based on the medical history, characteristic Radermecker complexes on the electroencephalogram (EEG), a sharply elevated titer of measles-specific IgG antibodies in the cerebrospinal fluid and blood, and demyelination revealed by MRI.

Conclusion: Panencephalitis represents the most severe complication of measles. Despite modern diagnostic methods, the disease is progressive and fatal, with universal vaccination remaining its only effective prevention measure.

Key words: measles, subacute sclerosing panencephalitis, Dawson's disease, diagnosis, vaccination

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BASIC LIFE SUPPORT (BLS) TRAINING: KEY ASPECTS OF CARDIOPULMONARY RESUSCITATION

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Cardiac arrest remains one of the most time-critical medical emergencies, in which early recognition and immediate initiation of high-quality cardiopulmonary resuscitation (CPR) are essential for improving patient outcomes. Basic Life Support (BLS) training provides healthcare professionals with the knowledge and practical skills required to recognize cardiac arrest rapidly, initiate effective CPR, and perform early defibrillation. Maintaining these competencies is particularly important for professionals working in emergency and prehospital care, where the first minutes of resuscitation are critical.

A structured BLS training program should integrate essential theoretical knowledge with repetitive hands-on practice. Key components include assessment of responsiveness and breathing, recognition of cardiac arrest, activation of the emergency response system, performance of high-quality chest compressions, appropriate ventilation, and early use of an automated external defibrillator (AED). Particular attention should be given to maintaining an adequate compression rate and depth, minimizing interruptions, ensuring effective ventilation, and following a standardized sequence of resuscitation interventions.

An important aspect of BLS education is the development of effective teamwork and communication during resuscitation. Cardiac arrest management frequently requires coordinated actions by several healthcare professionals, with clearly defined roles and continuous communication. Team-based simulation allows participants to practice decision-making, role allocation, AED use, and coordination of CPR in conditions that reproduce clinically relevant emergency scenarios.

Simulation-based education also provides an opportunity to identify technical and organizational errors and correct them through immediate instructor feedback. Repeated practical training can improve psychomotor skills, reinforce adherence to standardized resuscitation algorithms, and increase participants' confidence in managing cardiac arrest.

Regular assessment and retraining are essential because CPR skills may deteriorate over time without continued practice. Integration of simulation, structured feedback, and periodic competency assessment can support the maintenance of BLS skills and improve preparedness for real-life emergencies.
Therefore, BLS training should be considered an essential component of continuing professional education for emergency medical personnel. A structured and practice-oriented approach may contribute to faster recognition of cardiac arrest, higher-quality CPR, earlier defibrillation, and more effective team performance, ultimately supporting improved outcomes in patients experiencing cardiac arrest.

Keywords: Basic Life Support, Cardiopulmonary Resuscitation, Cardiac Arrest, Emergency Medicine, Resuscitation Training.

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BEYOND GLUCOSE CONTROL: THE IMPACT OF GLP-1 RECEPTOR AGONISTS AND CONTINUOUS GLUCOSE MONITORING ON ACUTE MEDICAL CARE

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Background: The rapid adoption of glucagon-like peptide-1 (GLP-1) receptor agonists and continuous glucose monitoring (CGM) technologies is transforming the management of diabetes, obesity, and cardiometabolic disease. As use of these innovations increases worldwide, acute care physicians are increasingly encountering patients receiving GLP-1 therapies and presenting with real-time glucose data from wearable devices. Understanding the opportunities and challenges associated with these technologies has become essential in modern acute medical practice.

Objective: To explore the impact of GLP-1 receptor agonists and continuous glucose monitoring systems on the assessment, management, and safety of patients presenting to acute medical services.

Methods: A contemporary review of emerging evidence, clinical guidelines, and practical experience relating to GLP-1 receptor agonists and CGM technologies within emergency departments, acute medical units, and inpatient settings was undertaken. Particular attention was given to clinical decision-making, medication-associated presentations, and digital monitoring strategies.

Results: GLP-1 receptor agonists provide substantial benefits in glycaemic control, weight management, and cardiometabolic risk reduction. However, their increasing use has introduced new challenges, including delayed gastric emptying, gastrointestinal adverse effects, dehydration, acute kidney injury, and peri-procedural management considerations. Simultaneously, CGM technologies, including Dexcom and FreeStyle Libre systems, offer continuous physiological data, enabling earlier recognition of hypoglycaemia, hyperglycaemia, and glycaemic variability. Integration of CGM data into acute care workflows has the potential to enhance clinical decision-making, improve patient safety, and support more personalised management.

Conclusion: GLP-1 receptor agonists and continuous glucose monitoring represent major advances extending beyond traditional diabetes care. Together, they are reshaping acute medical practice by providing new diagnostic insights, supporting earlier intervention, and facilitating

data-driven patient management. Acute care clinicians must become familiar with both the benefits and potential complications of these technologies as their use continues to expand.

Keywords: GLP-1 receptor agonists, continuous glucose monitoring, acute medicine, digital health, patient safety.

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GUT MICROBIOTA, PROBIOTICS AND OBESITY: WHAT DOES CURRENT EVIDENCE SHOW?

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Background: Obesity is a complex, multifactorial disease associated with metabolic dysfunction, chronic low-grade inflammation, and increased risk of cardiometabolic complications. Growing evidence indicates that the gut microbiota participates in host energy homeostasis and may influence adiposity through microbial metabolites, bile-acid signaling, intestinal barrier integrity, immune pathways, and the gut–brain axis. These findings have stimulated interest in probiotics as a potential adjunctive strategy for obesity management.

Objective: To critically summarize current evidence on the relationship between gut microbiota and obesity and to evaluate the efficacy and limitations of probiotic supplementation in improving anthropometric and selected metabolic outcomes in adults with overweight or obesity.

Methods: Recent systematic reviews, umbrella reviews, meta-analyses, and randomized controlled trials were considered, with emphasis on studies evaluating probiotic interventions and clinically relevant outcomes, including body weight, body mass index (BMI), waist circumference, body fat, glucose regulation, lipid parameters, and inflammatory markers. Particular attention was given to heterogeneity related to probiotic strains, dosage, intervention duration, dietary context, and participant characteristics.

Results: Current evidence supports a biologically plausible association between gut microbial composition and obesity, although no single microbial profile has been consistently established as a universal marker of obesity or weight-loss response. Probiotic supplementation has demonstrated modest improvements in selected anthropometric outcomes in several meta-analyses. A 2024 umbrella review reported small but statistically significant reductions in BMI, body weight, and body fat mass, while another umbrella review found beneficial effects of probiotics, prebiotics, and synbiotics on selected anthropometric and cardiometabolic markers. However, the certainty and methodological quality of the evidence remain variable, with substantial heterogeneity among trials. Strain-specific effects are particularly important, and

findings from one probiotic preparation cannot necessarily be generalized to other strains or combinations.

Conclusion: The gut microbiota represents a relevant component of the biological pathways involved in obesity, but its role is complex and influenced by diet, lifestyle, host characteristics, and microbial ecology. Current clinical evidence suggests that selected probiotics may provide modest additional benefits when combined with established lifestyle-based approaches, rather than functioning as a standalone treatment. Future research should prioritize adequately powered, longer-term randomized controlled trials, standardized outcome measures, strain-specific characterization, and investigation of responder phenotypes to clarify which probiotic interventions may have clinically meaningful effects in obesity management.

Keywords: gut microbiota, probiotics, obesity, dysbiosis, metabolism

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NON-CONVULSIVE STATUS EPILEPTICUS (NCSE) IN INTENSIVE CARE: INTERNATIONAL GUIDELINES AND LOCAL CLINICAL CAPABILITIES

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Introduction:

Non-Convulsive Status Epilepticus (NCSE) represents one of the most challenging and frequently undiagnosed conditions in neurocritical care. In critically ill patients, altered or depressed consciousness is often incorrectly attributed to primary pathologies (such as sepsis, trauma, or metabolic derangements), leading to delayed diagnosis of NCSE. Without timely intervention, NCSE is associated with irreversible neuronal injury, prolonged hospital stay, and high mortality.

Objective:

This paper aims to review current international guidelines for the diagnosis and management of NCSE (including the Salzburg 2015 criteria and AES/NCSE guidelines) and to analyze practical pathways for their adaptation, considering local clinical resources and capabilities.

Main Content:

According to international protocols, continuous electroencephalography (cEEG) monitoring is the "gold standard" for diagnosing NCSE. Unfortunately, in Georgia—particularly outside the capital—24/7 cEEG monitoring is frequently unavailable in routine clinical practice. This paper discusses screening clinical algorithms that assist intensivists in the timely identification of high-risk patients (e.g., post-convulsive coma, unexplained encephalopathy, subtle motor phenomena).

Furthermore, we review the tactical use of first- and second-line antiepileptic drugs and the role of the "therapeutic test" in the diagnostic process when continuous monitoring is limited.

Conclusion:

Effective management of NCSE requires a high index of clinical suspicion and close collaboration between intensivists and neurologists. Adapting international guidelines to local capabilities

enables the development of optimal clinical pathways, which can significantly improve outcomes for neurocritical patients.

Key words: Non-Convulsive Status Epilepticus, Intensive Care, undiagnosed conditions, high-risk patients.

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CURRENT ISSUES IN THE POSTOPERATIVE MANAGEMENT OF NECROTIZING ENTEROCOLITIS COMPLICATED BY SHORT BOWEL SYNDROME IN NEONATES

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Background: Necrotizing enterocolitis (NEC) is a major cause of neonatal intestinal morbidity and mortality. Extensive intestinal necrosis and surgical resection may result in short bowel syndrome (SBS), intestinal failure, prolonged parenteral nutrition dependence, and impaired growth.

Aim: To summarize current evidence on the management of NEC when extensive bowel loss leads to SBS, with emphasis on bowel-preserving surgery, nutritional support, and intestinal rehabilitation.

Methods: A narrative review was developed using an evidence-based European guideline on surgical management of NEC, contemporary peer-reviewed reviews, and published studies of multidisciplinary intestinal rehabilitation in children with SBS.

Results: Management requires early recognition of deterioration and coordinated neonatal, surgical, and nutritional care. Pneumoperitoneum is an absolute indication for urgent surgical intervention; other decisions should integrate serial clinical assessment, laboratory findings, and imaging. During surgery, resection should be limited to clearly nonviable bowel while ensuring adequate source control. In selected stable infants, primary anastomosis may be considered, particularly when preservation of bowel length is critical; diversion remains appropriate in other clinical circumstances. After extensive resection, individualized parenteral nutrition supports growth while enteral feeding is introduced and advanced according to clinical tolerance. Human milk, careful fluid and electrolyte management, monitoring for catheter-related infection and intestinal-failure-associated liver disease, and assessment of micronutrient status are important components of care. A multidisciplinary intestinal rehabilitation program can support intestinal adaptation, optimize nutrition, and assess the potential for reducing parenteral nutrition dependence. Evidence remains limited for several surgical decisions, and management must be individualized.

Conclusions: Improving outcomes in NEC-associated SBS depends on timely, evidence-informed

surgical decisions that preserve viable intestine, followed by structured nutritional care and long-term multidisciplinary follow-up. Early referral to an intestinal rehabilitation team is important for growth, complication prevention, and assessment of enteral autonomy.

Keywords: Necrotizing Enterocolitis; Short Bowel Syndrome; Intestinal Failure; Bowel Preservation; Intestinal Rehabilitation

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SUDDEN CARDIAC DEATH AND THE ROLE OF IMPLANTABLE CARDIAC DEVICES IN ITS PREVENTION

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Background: Sudden cardiac death (SCD) remains a major global public health challenge, accounting for a substantial proportion of cardiovascular mortality. It is most commonly associated with ventricular tachycardia (VT) and ventricular fibrillation (VF), particularly in patients with structural heart disease, heart failure, and inherited arrhythmogenic disorders. Despite advances in cardiovascular diagnostics and pharmacological treatment, identifying individuals at the highest risk of SCD and implementing effective preventive strategies remain critical clinical priorities.

Objective: To review the role of implantable cardioverter-defibrillators (ICDs) in the primary and secondary prevention of SCD, focusing on current indications, supporting clinical evidence, and the importance of individualized risk assessment.

Methods: The review provides a narrative overview of contemporary guideline recommendations and major clinical trials evaluating ICD therapy. Evidence from the DEFINITE, SCD-HeFT, MADIT-II, and DANISH trials is discussed, alongside current approaches to risk stratification in ischemic and non-ischemic cardiomyopathies and inherited arrhythmia syndromes.

Results: Clinical evidence supports ICD implantation as an effective strategy for preventing arrhythmic death in appropriately selected patients.[1] The SCD-HeFT trial demonstrated a 23% relative reduction in all-cause mortality with ICD therapy,[2] while MADIT-II reported a 31% reduction in mortality among patients with previous myocardial infarction and left ventricular systolic dysfunction.[3] The DEFINITE trial demonstrated a significant reduction in arrhythmic sudden death in patients with non-ischemic dilated cardiomyopathy.[4] The DANISH trial subsequently showed a significant reduction in SCD among patients with non-ischemic systolic heart failure, without a statistically significant reduction in overall mortality.[5] These findings highlight the importance of competing risks, age, comorbidities, and the underlying cardiac substrate when selecting candidates for primary prevention. Secondary prevention remains a major indication for ICD implantation in survivors of cardiac arrest due to VT/VF or patients

with hemodynamically unstable ventricular arrhythmias, provided reversible causes have been excluded. Beyond reduced left ventricular ejection fraction, risk assessment may incorporate cardiac magnetic resonance imaging, genetic testing, arrhythmic history, and disease-specific markers in selected patients with cardiomyopathies and inherited arrhythmia syndromes.

Conclusion: ICD therapy is a cornerstone of SCD prevention, particularly in patients at high risk of life-threatening ventricular arrhythmias. Optimal patient selection requires integration of guideline-based indications, ventricular function, arrhythmic history, disease-specific risk factors, comorbidities, and life expectancy. Combining comprehensive risk stratification with optimized guideline-directed medical therapy is essential to maximize clinical benefit and improve outcomes.

Keywords: Sudden cardiac death, implantable cardioverter-defibrillator, primary prevention, secondary prevention, risk stratification.

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LAPAROSCOPIC-ENDOSCOPIC TREATMENT OF GASTROINTESTINAL BLEEDING IN CHILDREN

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A study conducted in the European Union showed that, annually, 5–6 patients per 10,000 population presented to a clinic with bleeding from the upper gastrointestinal tract. Bleeding of an ulcerative etiology accounted for 22% of cases. Risk factors included the use of non-steroidal anti-inflammatory drugs (NSAIDs), most frequently in the 2- to 7-year-old age group.

Globally, the mortality rate among children due to upper gastrointestinal bleeding ranges from 4% to 15%. This variation depends on geographical location: in Asia and developing countries, bleeding from esophageal varices is more common—resulting in higher mortality.

Bleeding from Meckel's diverticulum and its surgical management in pediatric population

First laparoscopic treatment of Meckel's diverticulum in our clinic was done in 2015 year, Intracorporal Meckel diverticulectomy with a linear stapler. Meckel's diverticulectomy can be performed either intracorporeally or extracorporeally. Since 2018, laparoscopy-assisted trans-umbilical Meckel's diverticulectomy (LATUM) has been established. The height-to-diameter ratio of the Meckel Diverticulum < 2 – segmental resection of ileum.

Intestinal intussusception in children: evolution stages of diagnosis and treatment. Clinic experience

Intussusception is a serious condition in which part of the intestine slides into an adjacent part of the intestine, which causes intestinal obstruction. It is the most common form of intestinal obstruction in children. Intussusception mainly develops at the age of 4 months to 1.5 years, which is due to the anatomical and physiological features of the gastrointestinal tract.

Evolution of intussusception diagnosis and treatment in children in our clinic. Until 1985, under fluoroscopy, with air or Barium enema, if the disease onset in less than 24 hours. If ineffective—manual reduction by open surgery, 1985- 2012- fibroendoscopy desinvagination (68 pts)

Since 2012 year we use the Ultra Sound guided hydrostatic reduction. In our experience, successful reduction was in 82.3% of cases; in unsuccessful cases, Laparoscopic Desinvagination was performed. The mean age was 10 months (6–18 months). The duration of the disease was more than 24 hours. A three-trocar technique was used for all patients. Patients had an ileocecal

intussusception. None of the patients required an intestinal resection. Appendectomy was done in all cases.

Keywords: Intestinal intussusception, laparoscopic Desinvagination, gastrointestinal bleeding, Meckel's diverticulum.

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ANTIBIOTIC RESISTANCE GENE PROFILES AND THEIR ASSOCIATION WITH DISEASE SEVERITY, PATHOPHYSIOLOGICAL PARAMETERS, AND CLINICAL OUTCOMES

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Objective: To characterize antimicrobial resistance gene profiles in bacterial isolates from patients with sepsis and/or pneumonia and explore their associations with inflammatory biomarkers.

Materials and Methods: The study included 32 patients of both sexes with sepsis and/or pneumonia treated at the First University Clinic. The mean age was 70.2 years, with an age range of 29-93. Bacterial isolates predominantly comprised Acinetobacter and Klebsiella. DNA microarray analysis targeting 57 antimicrobial resistance-associated genes was performed at the Walter Reed Army Institute of Research. Resistance gene profiles were visualized using a custom MATLAB program, and isolates were grouped according to their genetic profiles. Associations between major cluster membership and bacterial group were evaluated using Fisher's exact test. Differences in C-reactive protein (CRP), ferritin, procalcitonin (PCT), white blood cell count (WBC), and recorded clinical severity measures were assessed using the Mann–Whitney U test. Analyses were exploratory.

Results: Visual inspection of the resistance gene clustergram identified two major clusters, A and B, with distinct resistance gene patterns. Cluster A predominantly comprised Acinetobacter isolates, whereas Cluster B predominantly comprised Klebsiella isolates.

Cluster membership was significantly associated with bacterial group (Fisher's exact $p < 0.001$). No statistically significant differences in the recorded clinical severity measures were detected between the major clusters.

Further examination identified within-cluster genetic heterogeneity, permitting subdivision into A0 and A1, and B0 and B1. CRP levels differed between A0 and A1 ($p = 0.0233$).

Ferritin levels differed between both A0 and A1 ($p = 0.043$) and B0 and B1 ($p = 0.047$). CRP did not differ significantly between B0 and B1, and no significant within-cluster differences were identified in PCT or WBC.

Conclusion: Antimicrobial resistance gene profiles identified distinct genetic clusters associated with bacterial group. Within-cluster differences in selected inflammatory biomarkers suggest preliminary associations between resistance gene patterns and inflammatory characteristics. These exploratory findings do not establish independent associations with disease severity or clinical outcomes. Larger studies are required to evaluate their clinical significance.

Keywords: Antimicrobial resistance, resistance genes, sepsis, inflammatory biomarkers

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MANAGEMENT OF HIGH-ENERGY LONG-BONE INJURIES

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Background:

High-energy long-bone injuries are complex orthopedic conditions often associated with extensive soft-tissue damage, hemorrhage, neurovascular compromise, and multiple-organ trauma. Their management requires a systematic approach that prioritizes patient survival, limb preservation, and functional recovery.

Objective:

To review the key principles of assessment, stabilization, and definitive management of high-energy long-bone injuries, with emphasis on individualized treatment strategies and complication prevention.

Methods:

A narrative review of the principal approaches to high-energy long-bone trauma management, including initial trauma assessment, radiological evaluation, fracture classification, open fracture management, damage control orthopedics, definitive fixation, and postoperative care.

Results:

Initial management focuses on identifying and treating life-threatening conditions, controlling hemorrhage, and assessing the patient's physiological status. Radiological evaluation and fracture classification guide treatment planning. The choice between temporary stabilization and early definitive fixation depends primarily on physiological stability and associated injuries. Treatment options include intramedullary nailing, plate fixation, and external fixation, selected according to fracture morphology, soft-tissue condition, and patient status. Open fractures require prompt

antibiotic prophylaxis, appropriate surgical debridement, and coordinated soft-tissue management. Repeated neurovascular examinations and early recognition of compartment syndrome are essential. Postoperative care includes infection prevention, thromboembolism prophylaxis, mobilization, and individualized rehabilitation.

Conclusion:

Successful management of high-energy long-bone injuries depends on timely assessment, appropriate stabilization, careful selection of fixation techniques, and multidisciplinary coordination. Balancing physiological safety, mechanical stability, and preservation of biological healing potential is essential to minimize complications and optimize functional outcomes.

Keywords: High-energy trauma; long-bone fractures; damage control orthopedics; fracture fixation; open fractures; complication prevention.

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EARLY RECOGNITION AND MANAGEMENT OF NEUTROPENIC SEPSIS AFTER HEMATOPOIETIC STEM CELL TRANSPLANTATION IN CHILDREN

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Background: Life-threatening infections are a relevant complication of hematopoietic stem cell transplantation (HSCT) in children, largely due to defects in immune reconstitution. Recovery of neutrophils does not necessarily reflect the status of the adaptive immune system. The combination of neutropenia and humoral immunodeficiency confers a higher risk for development of severe infections, sepsis and septic shock.

Aims: To summarize the pathophysiology, diagnosis and treatment of neutropenic sepsis in children after HSCT with a focus on the clinical relevance of humoral immunodeficiency.

Methods: Narrative review of the peer-reviewed literature and international guidelines supplemented by a retrospective case description of one anonymized patient. Description of clinical presentation, antimicrobial therapy, hematological parameters, immune assessment, and outcome.

Clinical Presentation: Admission of a 35-month-old boy one year after allogeneic HSCT for acute myeloid leukemia for severe pneumonia, acute respiratory failure and clinical septic shock. Oxygen saturation 87% in room air, C-reactive protein 229.78 mg/L, absolute neutrophil count (ANC) 0.85 x 10(9)/L. During hospitalization ANC dropped down to 0.44 x 10(9)/L. Bilateral pulmonary infiltrates on chest CT, ultrasonography of the thorax: loculated right parapneumonic effusion. Pleural drainage performed; antimicrobial therapy upgraded in the course of clinical deterioration. Discontinuation of vancomycin due to suspected drug-induced aggravation of neutropenia. Additional immune assessment revealed profound hypogammaglobulinemia (IgG 0.0249 g/L), treated with intravenous immunoglobulin (IVIG). Recovery of neutrophil counts was already underway when IVIG treatment was started. After control of the infection source and multidisciplinary treatment, improvement of respiratory function and hematological parameters. After 22 days of admission, the patient was discharged afebrile and hemodynamically stable, ANC 3.52 x 10(9)/L, oxygen saturation 98% on room air.

Conclusion: Neutropenic sepsis after HSCT calls for early recognition of organ dysfunction,

adequate antimicrobial treatment, early control of the infection source and monitoring of blood counts. In case of complicated course or prolonged duration of infection, humoral immunity should be assessed to address potentially treatable deficiency. Treatment with IVIG is warranted in case of documented severe hypogammaglobulinemia and should not be seen as a treatment per se of sepsis or be attributed to be the cause of recovery of neutrophil counts.
Keywords: sepsis, HSCT, septic shock, immunodeficiency, hypogammaglobulinemia

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THE ROLE OF POINT-OF-CARE ULTRASOUND IN MODERN GENERAL ANESTHESIA

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Background:
Point-of-care ultrasound (POCUS) has evolved from a primarily procedural tool into an important component of modern perioperative medicine. It provides anesthesiologists with rapid, real-time anatomical and physiological information that complements physical examination and conventional monitoring. Its portability and non-invasive nature make POCUS particularly valuable when immediate clinical decision-making is required.

Objective:
To review the current role and major applications of POCUS in general anesthesia and its contribution to perioperative assessment, clinical decision-making, and patient safety.

Discussion:
POCUS can be applied throughout the preoperative, intraoperative, and postoperative periods. Focused cardiac ultrasound enables rapid assessment of ventricular function, volume status, pericardial effusion, and potential causes of hemodynamic instability. Lung ultrasound can assist in identifying pneumothorax, pleural effusion, pulmonary interstitial syndrome, atelectasis, and causes of perioperative hypoxemia.

Gastric ultrasound may help assess gastric content and aspiration risk, particularly when fasting status is uncertain. Airway ultrasound can support airway assessment and confirmation of endotracheal tube position. Ultrasound guidance is also widely used for vascular access and regional anesthesia.

In hemodynamically unstable patients, integration of cardiac, pulmonary, and vascular ultrasound findings may facilitate rapid differentiation of major causes of shock and guide individualized fluid and vasoactive therapy. However, POCUS remains operator-dependent and requires structured training, appropriate image interpretation, and integration with the overall clinical picture.

Conclusion:

POCUS is becoming an important extension of the anesthesiologist's clinical examination. Its integration into general anesthesia practice may support faster diagnosis, individualized perioperative management, and improved patient safety. Continued development of portable ultrasound technology and standardized training is likely to further expand its role in modern anesthesiology.

Keywords: Point-of-Care Ultrasound; POCUS; General Anesthesia; Perioperative Medicine; Patient Safety.

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DIAGNOSIS AND MANAGEMENT OF FUNGAL INFECTIONS IN ICU PATIENTS

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Background: Invasive fungal infections remain an important challenge in intensive care units (ICUs) because of their association with increased mortality, prolonged hospitalization, and substantial healthcare costs. Candidiasis, aspergillosis, and mucormycosis are among the major fungal infections encountered in critically ill patients, while the emergence of multidrug-resistant *Candida auris* has created additional diagnostic and infection-control concerns.

Objective: To summarize the main diagnostic and management challenges of fungal infections in ICU patients, with particular emphasis on differentiation between colonization and invasive infection, interpretation of fungal biomarkers, and infection prevention and control.

Methods: A focused review of clinically relevant evidence on invasive fungal infections in critically ill patients was performed. Particular attention was given to respiratory *Candida* isolation, beta-D-glucan and galactomannan testing, invasive aspergillosis, and infection-control measures related to *Candida auris*.

Results: Isolation of *Candida* species from respiratory samples frequently represents colonization rather than true infection. In one prospective autopsy study, *Candida* spp. were isolated from respiratory samples in 77 patients with histopathologically confirmed pneumonia, yet no cases of *Candida* pneumonia were identified. Beta-D-glucan is useful as a broad marker of invasive fungal infection, whereas galactomannan is more specifically applied in suspected aspergillosis. In proven or probable invasive aspergillosis, both markers showed 88% sensitivity and 90% specificity, while their combined use increased specificity to 100%. Interpretation must consider possible false-positive results related to hemodialysis, selected antibiotics, surgical materials, and severe bacterial infections. *Candida auris* represents an additional challenge because of multidrug resistance, environmental persistence, biofilm formation, and its capacity for healthcare-associated transmission.

Conclusion: Diagnosis of fungal infections in ICU patients requires careful integration of clinical findings, microbiological results, and fungal biomarkers. Distinguishing colonization from invasive disease is essential to avoid unnecessary treatment, while appropriate infection-control

measures are particularly important for emerging pathogens such as *Candida auris*. Close collaboration among clinicians, microbiologists, and epidemiologists remains central to effective management and prevention.

Keywords: Invasive fungal infections; Intensive care unit; *Candida auris*; Beta-D-glucan; Galactomannan

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THE ROLE AND IMPORTANCE OF MOLECULAR EPIDEMIOLOGY IN THE INTENSIVE CARE UNIT

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Background: Healthcare associated infections (HAIs) remain among the most important challenges in healthcare facilities. Traditional culture-based and phenotypic methods are valuable for identifying pathogens, but may provide limited information on transmission pathways and the genetic relationships between isolates. Molecular epidemiology, particularly whole-genome sequencing (WGS), enables high-resolution characterization of pathogens, antimicrobial resistance determinants, and possible transmission links.

Objective: To demonstrate the role and importance of molecular epidemiology in intensive care unit (ICU) infection surveillance by integrating genomic characterization of environmental isolates with previously collected clinical and environmental isolates.

Methods: Environmental surveillance was conducted at Tbilisi State Medical University Hospital. In November 2024, 30 environmental swabs were collected and 33 potentially clinically relevant bacterial colonies were isolated. In May 2025, 20 additional environmental swabs yielded 20 bacterial colonies from 10 swabs. Isolates were characterized by WGS and compared with clinical and environmental isolates collected at the hospital between 2018 and 2025. Sequence types, genetic relatedness, antimicrobial resistance genes, and selected virulence determinants were assessed.

Results: Genomic analysis demonstrated persistent contamination by both Gram-positive and Gram-negative bacteria and identified important epidemiological relationships. A *Klebsiella pneumoniae* ST-147 isolate recovered from ICU bed rails was highly genetically related to 37 clinical isolates and two previously collected ICU environmental isolates and carried **blaCTX-M-15, blaNDM-1, and blaOXA-48**. Twelve *Acinetobacter baumannii* isolates recovered from ICU-3 belonged to pandemic clone ST-2; 11 were highly genetically related and were recovered from nine different locations, indicating contamination of multiple ICU surfaces. A *Pseudomonas aeruginosa* ST-357 isolate was highly genetically related to three patient isolates, suggesting possible nosocomial transmission. In contrast, another *P. aeruginosa* isolate recovered from an

ICU sink was not closely related to previously collected isolates and carried no antimicrobial resistance genes of interest. An *Enterococcus faecium* ST-80 isolate recovered from an ICU air vent carried the **vanA** operon but was distantly related to previous patient isolates.

Conclusion: Molecular epidemiology provides important additional resolution for ICU surveillance by distinguishing persistent environmental contamination, possible transmission clusters, and genetically unrelated isolates while simultaneously identifying antimicrobial resistance determinants. Integration of WGS with routine infection prevention and control can support more precise identification of transmission pathways, targeted environmental interventions, and improved surveillance of antimicrobial-resistant organisms.

Keywords: Molecular epidemiology; Intensive care unit; Whole-genome sequencing; Healthcare-associated infections; Antimicrobial resistance

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MANAGEMENT OF SEPSIS CAUSED BY ACUTE SPHENOIDITIS IN PEDIATRIC PATIENTS

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Acute sphenoiditis is an uncommon but potentially life-threatening infection in pediatric patients, occasionally complicated by sepsis, intracranial infection, and organ dysfunction. This review examines current approaches to early diagnosis and management of sphenoiditis-associated sepsis. Nonspecific clinical manifestations may delay recognition, emphasizing the importance of clinical assessment, laboratory investigations, and appropriate neuroimaging. Management requires prompt intravenous empirical antimicrobial therapy, subsequently adjusted according to microbiological findings, source control, and organ support. Hemodynamic instability necessitates pediatric sepsis management, cautious fluid resuscitation, and vasoactive support when indicated. Complicated cases require multidisciplinary collaboration involving intensive care specialists, otolaryngologists, and neurosurgeons. Continuous neurological monitoring and timely assessment for surgical intervention are essential. Early recognition and individualized treatment may reduce complications and improve clinical outcomes.

Keywords: Acute sphenoiditis, pediatric patients, sphenoiditis-associated sepsis, intensive care.

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FROM INFECTION TO ORGAN FAILURE: MITOCHONDRIAL DYSFUNCTION IN THE PATHOGENESIS OF SEPSIS

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Background:

Sepsis is a life-threatening syndrome caused by a dysregulated host response to infection and remains a major cause of multiple-organ dysfunction and mortality. Despite advances in antimicrobial therapy and intensive care, the mechanisms responsible for the transition from infection to progressive organ failure are not fully understood. Growing evidence suggests that mitochondrial dysfunction plays a central role in this process by linking inflammation, oxidative and nitrosative stress, immune dysregulation, endothelial injury, and impaired cellular bioenergetics.

Objective:

To discuss the role of mitochondrial dysfunction in the pathogenesis of sepsis and its potential importance in the development of organ dysfunction and biologically distinct host-response states.

Main concepts:

During sepsis, pathogen-associated and damage-associated molecular signals activate inflammatory pathways and stimulate excessive production of reactive oxygen and nitrogen species. These processes may impair the mitochondrial electron transport chain, disturb mitochondrial membrane potential, reduce ATP production, and increase mitochondrial ROS generation. Mitochondrial damage may also promote the release of mitochondrial DNA and other danger-associated signals, further amplifying innate immune responses through pathways involving NF-κB and the NLRP3 inflammasome.

Alterations in mitochondrial dynamics, mitophagy, and mitochondrial biogenesis may additionally compromise mitochondrial quality control. The resulting bioenergetic imbalance can affect immune cells, vascular endothelium, and metabolically active organs, contributing to

immune dysfunction, endothelial barrier impairment, microcirculatory abnormalities, and progressive failure of the heart, lungs, kidneys, liver, and other organs.

Importantly, mitochondrial dysfunction in sepsis is heterogeneous and may differ between patients and across the course of disease. Integration of mitochondrial parameters with inflammatory, redox, immune, endothelial, and metabolic markers may therefore help to define distinct biological endotypes and trajectories of sepsis.

Conclusion:

Mitochondrial dysfunction represents a critical interface between infection-induced inflammation and organ failure in sepsis. Better understanding of mitochondrial bioenergetics, redox imbalance, and mitochondrial quality-control mechanisms may improve patient stratification and support the development of personalised, host-directed therapeutic approaches.

Keywords: sepsis; mitochondrial dysfunction; organ failure; oxidative stress; bioenergetics; mitochondrial ROS; mtDNA; NLRP3 inflammasome; endotypes.

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FEBRILE CONDITIONS IN EMERGENCY MEDICINE

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Background: Fever is a common presenting symptom in emergency medicine and may indicate a wide spectrum of infectious conditions requiring prompt diagnosis and management. This study aimed to characterize the distribution of fever-associated diagnoses, hospitalization patterns, and severe complications using retrospective clinical data from 2024–2026.

Methods: A retrospective descriptive analysis of hospital statistical records from 2024 to 2026 was conducted. The analysis included selected infectious and fever-associated diagnoses classified according to the International Classification of Diseases, Tenth Revision (ICD-10). Annual case counts, intensive care unit (ICU) admissions, and recorded complications were evaluated.

Results: Cases classified as fever of unspecified origin (R50.9) increased from 304 in 2024 to 434 in 2025, followed by 282 in 2026. Corresponding ICU admissions were 4, 6, and 3, while recorded fatalities were 3, 4, and 0, respectively.

Pneumonia (J18.9) represented the most frequently recorded diagnosis, with 1,580 cases in 2024, 1,509 in 2025, and 785 in 2026. Associated respiratory failure (J96) was documented in 774, 673, and 416 cases, respectively.

Urinary tract infections (N39.0/N39.9) accounted for 610 cases in 2024, 908 in 2025, and 736 in 2026. Sepsis (A41.9) associated with urinary tract infections was recorded in 108, 162, and 142 cases, respectively. Overall, cases with a primary diagnosis of sepsis (A41.9) numbered 367 in 2024, 493 in 2025, and 411 in 2026.

Less frequently recorded conditions included meningitis (G03.9), with 20 cases in 2024 and 13 in 2026, as well as encephalitis/myelitis (G04.9) and acute tonsillitis (J03.9).

Conclusions: Pneumonia, urinary tract infections, and sepsis accounted for a substantial proportion of the selected fever-associated diagnoses. The frequent documentation of respiratory failure and sepsis highlights the importance of early clinical assessment, risk stratification, and timely recognition of potentially life-threatening complications in emergency care.

Keywords: Fever; Pneumonia; Sepsis; Urinary tract infection; Emergency medicine.

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COMBINED CONGENITAL MALFORMATION OF ORGAN DEVELOPMENT: DIAGNOSIS AND MANAGEMENT

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Introduction

The coexistence of congenital cardiovascular anomalies and major aortic arch malformations represents an extremely rare and complex clinical challenge in pediatric practice. The Aortopulmonary Window (APW) is a rare congenital defect accounting for **less than 0.5%** of all congenital heart disease. Similarly, the aberrant right subclavian artery (*Arteria Lusoria*/ARSA) is the most common aortic arch anomaly (with a population prevalence of 0.5%–1.8%); however, its combination with APW and the resulting severe obstructive and aspiration syndromes in infancy is exceptionally sporadic in medical literature.

Clinical Case

We report the complex management of a pediatric patient who was diagnosed with APW in the neonatal period following necrotizing enterocolitis (NEC). Primary surgical correction was performed at 3 weeks of age, followed by a prolonged postoperative course (1.5 months) requiring mechanical ventilation, tracheostomy, recurrent sepsis, and pneumonia.

Post-discharge, the patient experienced severe recurrent respiratory failure and right-sided pneumonia. Exertion and feeding induced marked tachypnea, diaphoresis, and noisy breathing. The NT-proBNP level was 300 pg/mL. Multimodal imaging via chest CT-angiography revealed an *artery lusoria* exerting extrinsic compression on the esophagus. Barium contrast studies failed to identify the anomaly, whereas upper esophagoscopy definitively demonstrated pulsatile vascular compression nearly obliterating the esophageal lumen, which served as the primary pathophysiological cause of chronic aspiration and recurrent pneumonias. The patient underwent successful surgical intervention—reimplantation of the aberrant vessel into the right common carotid artery. The patient was successfully extubated within 24 hours postoperatively.

Pathophysiology and Epidemiology

While aspiration pneumonias and severe respiratory distress caused by aberrant vessels in infants are frequently compounded by soft tracheal cartilages and tracheobronchomalacia, persistent micro- and macro-aspiration driven by severe esophageal compression dramatically increases the incidence of recurrent pulmonary infections and mortality. APW induces a massive left-to-right shunt and pulmonary hyperperfusion, whereas *Arteria Lusoria* establishes an extrinsic vascular ring compression that disrupts normal swallowing mechanics.

Diagnostic Challenges and Management

Diagnosing such complex anomalies in infants is fraught with difficulties, as standard barium contrast examinations often fail to visualize dynamic obstruction. A multidisciplinary approach is mandatory: alongside **CT angiography**, **high-resolution endoscopic evaluation** plays a definitive diagnostic role. Management requires highly specialized pediatric intensive care and cardiothoracic surgical expertise.

Conclusion

This unique clinical case emphasizes that in cases of refractory respiratory failure and recurrent pneumonia, clinicians must actively screen for rare vascular anomalies (*Arteria Lusoria*) in addition to primary cardiac defects. Early multimodal diagnosis and prompt surgical correction are critical for patient survival and long-term prognosis.

Keywords: APW, ARSA, NEC, Aspiration Pneumonia.

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MODERN RADIOLOGICAL DIAGNOSIS OF STROKE IN EMERGENCY MEDICINE

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Introduction: Acute stroke is a major global health challenge where the time factor is critical for management ("time is brain"). In recent years, neuroradiology has shifted from traditional structural imaging to multimodal functional assessment, driving revolutionary changes in patient diagnosis and treatment.

Objective: The aim of this study is to analyze the diagnostic value of modern radiological algorithms—specifically multiparametric computed tomography (CT) and magnetic resonance imaging (MRI)—in the management of acute ischemic stroke, including their sensitivity statistics and the role of artificial intelligence (AI).

Methods: Based on a systematic review of scientific literature, imaging protocols implemented in clinical practice were evaluated. Non-contrast CT and CT angiography (CTA) were compared with magnetic resonance imaging techniques (DWI, FLAIR). Results: The study demonstrated that non-contrast CT maintains nearly 100% sensitivity for ruling out acute hemorrhage; however, its sensitivity during the early hours of hyperacute ischemia is low, ranging from 40% to 60%. CTA shows high sensitivity (92–98%) in identifying large vessel occlusions. Meanwhile, MRI diffusion-weighted imaging (DWI) is considered the gold standard, with sensitivity reaching 94–99% within the very first hours of acute ischemia. The DWI/FLAIR mismatch concept, with a specificity exceeding 83%, accurately determines the time of symptom onset in "wake-up" strokes.

Conclusion: Modern radiological management of stroke relies on a personalized approach. CT and MRI do not exclude but rather complement each other: CT is optimal for rapid triage during the ultra-acute phase (due to high availability), whereas MRI is indispensable for early diagnosis and complex clinical cases. The integration of neuroimaging and artificial intelligence maximizes the chances of effective treatment and significantly improves functional outcomes for patients.

Keywords: Acute ischemic stroke; CT; MRI DWI/FLAIR mismatch; artificial intelligence; diagnostic sensitivity.

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MANAGEMENT OF SEVERE POLYTRAUMA FOLLOWING A FALL FROM AN EIGHT-STORY BUILDING: A CASE REPORT AND EVALUATION OF ADHERENCE TO INTERNATIONAL GUIDELINES

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Background: High-energy trauma resulting from falls from height presents a complex clinical challenge requiring rapid prioritization of interventions, prompt resuscitation, and adherence to evidence-based international protocols. This case report describes the management of an 18-year-old male who sustained severe polytrauma following a suicide attempt by jumping from an eight-story building, evaluating the clinical course against Advanced Trauma Life Support (ATLS) and European trauma management guidelines.

Case Description: An 18-year-old male was admitted to the Emergency Department in a comatose state with signs of severe hemorrhagic shock (blood pressure, 85/50 mmHg; heart rate, 116 beats/min; SpO_2, 84%). Initial resuscitation included endotracheal intubation, central venous catheterization, and vasopressor support with norepinephrine and phenylephrine. Initial whole-body computed tomography (CT) revealed traumatic brain injuries, including parietal hemorrhagic contusions and subarachnoid hemorrhage; vertebral fractures at C5, T3, T6, T11, and L4; left-sided hemopneumothorax; extensive subcutaneous emphysema; bilateral pulmonary contusions; fractures of the first and fifth through seventh ribs and the scapula; and grade II liver, grade II splenic, and grade I renal injuries according to the American Association for the Surgery of Trauma (AAST) classification.

Management and Guideline Considerations: Emergency exploratory laparotomy was performed on the first post-injury day, with hepatorrhaphy, splenic laceration repair, and abdominal drainage, alongside left chest tube insertion. Cerebral protection and intensive neurological monitoring (sedation with thiopental and midazolam) were provided without surgical neurointervention. Following initial stabilization, follow-up ultrasonography and CT demonstrated a favorable course without the need for further intervention for the solid-organ injuries. In response to clinical concern for infection and elevated C-reactive protein levels (CRP,

170 mg/L), empirical antimicrobial therapy with meropenem and vancomycin was initiated. On post-injury day 7, the clavicle fracture was treated with open reduction and internal fixation. Subsequent clinical improvement permitted successful extubation and discontinuation of vasopressor support. Full neurological recovery was observed. Psychiatric assessment and management were provided for acute polymorphic psychotic symptoms and suicide risk. The patient was discharged on post-injury day 24 for continued specialized psychiatric care and physical rehabilitation.

Conclusion: The management of severe polytrauma following a fall from height requires prompt assessment, timely hemorrhage control, appropriate management of thoracic and traumatic brain injuries, and coordinated multidisciplinary care. This case illustrates the complexity of clinical decision-making in severe multisystem trauma and highlights the importance of evaluating individual interventions against established international guidelines.

Keywords: Polytrauma; ATLS principles; non-operative management; damage control surgery; traumatic brain injury.

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ARTIFICIAL INTELLIGENCE IN MEDICINE: HOW EMERGING TECHNOLOGIES ARE TRANSFORMING HEALTHCARE

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The relevance of this study is driven by the global transformation of healthcare, where artificial intelligence has evolved from an auxiliary tool into a systemic driving force. According to 2024 data, the global AI market in healthcare was valued at USD 14.92 billion and reached an estimated USD 21.66 billion in 2025. Experts project that it will grow to USD 110.61 billion by 2030, at a compound annual growth rate of 38.6%. By 2024 alone, the U.S. Food and Drug Administration had approved 882 artificial intelligence-based medical devices for market use, while in several American hospitals more than 40% of chest X-ray interpretations are already performed with AI support. This indicates that the technology has moved beyond the experimental phase and into routine clinical practice.

The objective of our research is to systematically analyze how artificial intelligence is reshaping diagnostics, treatment personalization, drug discovery, and medical administration; to identify the benefits and risks it creates at the global level; and to examine the specific challenges Georgia faces in this process.

The study employs a mixed-methods approach that includes a quantitative analysis of international scientific databases and market reports, a qualitative review of Georgia's legislative framework, digital infrastructure, and academic initiatives, and an analysis of semi-structured interviews with field experts.

The core of the paper demonstrates that artificial intelligence has enabled a substantial increase in diagnostic accuracy in radiology, ophthalmology, and pathology, optimized time and cost expenditures, and advanced the development of personalized medicine. At the same time, it has raised critical issues related to data privacy, algorithmic bias, and ethical responsibility.

A distinct section is devoted to the Georgian context. Although Georgian legislation does not prohibit the use of artificial intelligence in public institutions, no specific regulatory framework currently exists. The Georgia Artificial Intelligence Association's priorities for 2024–2025 remain

talent identification, professional development, and awareness-raising, which indicates that the country is still at an early stage of adoption. Key challenges include low levels of digital technology integration in clinics, the fragmentation of electronic health records, a shortage of qualified personnel, and insufficient investment.
Particular attention is given to the financial dimension. International experience shows that the initial implementation of AI requires significant capital expenditure for infrastructure, licensing, and workforce training. However, in the medium term it reduces diagnostic and administrative costs by 30–40% and alleviates the financial burden of chronic disease management — a factor of critical importance for a resource-constrained country such as Georgia. Accordingly, the study proposes a hybrid financing model for Georgia based on public-private partnerships, international grant programs, and the involvement of the insurance sector, to ensure that high-technology services become accessible within the framework of universal healthcare.

Keywords: Artificial Intelligence, Digital Healthcare, Medical Diagnostics, Georgian Healthcare System, Healthcare Economics

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LUMBAR EPIDURAL STEROID INJECTION APPROACHES FOR LOW BACK AND RADICULAR PAIN: A COMPARATIVE REVIEW OF TRANSFORAMINAL, INTERLAMINAR, AND CAUDAL TECHNIQUES

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Background: Lumbar epidural steroid injections (LESIs) are widely used to manage radicular low back pain. However, clinicians must select from three distinct anatomical approaches: transforaminal (TFESI), interlaminar (ILESI), and caudal (CLESI), each possessing unique technical, efficacy, and safety profiles.

Objective: To systematically synthesize and compare the anatomical targets, therapeutic efficacy, indications, and safety risks associated with TFESI, ILESI, and CLESI.

Methods: A comprehensive search of peer-reviewed literature was conducted using PubMed and EMBASE for clinical trials, meta-analyses, and society guidelines evaluating LESI approaches. Primary outcomes included short- and long-term pain relief, functional recovery, and procedure-related adverse events.

Results: TFESI provides the highest target specificity, delivering medication directly to the anterior epidural space at the affected nerve root. It yields superior short-term pain reduction with lower injectate volumes, but carries a higher risk of severe neurological complications from particulate embolization. ILESI distributes medication diffusely across the posterior epidural space, offering effective bilateral relief for multi-level degenerative disease or central stenosis, with negligible vascular risk but a higher incidence of accidental dural puncture. CLESI provides safe access via the sacral hiatus with minimal dural puncture risk; despite requiring larger volumes to reach upper lumbar segments, it remains the optimal choice for post-laminectomy syndrome or complex spinal anatomy. Long-term results of these three different epidural approaches are not statistically different. For some clinical situations, it is reasonable to use a combination of TFESI and CLESI or TFESI and ILESI.

Conclusion: Selection of an LESI route should be individualized based on pathology, target anatomical compartment, and patient surgical history. TFESI excels for focal unilateral

radiculopathy, ILESI for multi-level or central pathology, and CLESI for post-surgical or altered anatomy.

Keywords: Low back pain; Radiculopathy; Lumbar epidural steroid injection; Transforaminal; Interlaminar; Caudal; Interventional pain management.

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CRITICAL CONDITIONS OF TOXIC AND ALLERGIC GENESIS IN INTENSIVE CARE: DIFFERENTIAL DIAGNOSTICS AND MANAGEMENT OF CARDIORESPIRATORY SYNDROMES

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Introduction: Toxic exposures and severe hypersensitivity reactions may cause life-threatening cardiovascular and respiratory complications requiring prompt recognition, emergency intervention, and intensive care management. Diagnostic challenges are particularly significant when patients present with profound hemodynamic instability, acute respiratory failure, and evidence of myocardial injury.

Objective: To illustrate the diagnostic challenges and intensive care management of severe cardiorespiratory complications associated with toxic and hypersensitivity-related exposures through the analysis of two clinical cases.

Materials and Methods: This descriptive report presents two clinical cases managed at the First University Clinic of Tbilisi State Medical University. The analysis was based on medical records, clinical presentation and progression, laboratory findings, diagnostic imaging, toxicological investigations, and therapeutic interventions.

Results: Case 1: A 43-year-old woman developed acute respiratory failure, severe hypoxemia, arterial hypotension, and frothy oral secretions shortly after applying hair dye. Clinical evaluation revealed pulmonary edema, left ventricular systolic dysfunction with an ejection fraction of 37%, and elevated cardiac troponin levels, indicating myocardial injury. The clinical diagnosis was anaphylactic shock complicated by acute left ventricular dysfunction and pulmonary edema. Following intensive care management, including invasive mechanical ventilation and supportive therapy, the patient's condition improved, and she was subsequently discharged.

Case 2: A 62-year-old man developed profound bradycardia (heart rate: 37 beats/min), hemodynamic instability, and acute respiratory failure following the ingestion of a large quantity of honey. Toxicological testing confirmed the presence of grayanotoxin, supporting the diagnosis of grayanotoxin poisoning. The patient required endotracheal intubation, invasive mechanical ventilation, and hemodynamic support, including atropine and dopamine administration. Coronary angiography revealed no significant coronary artery lesions, while computed tomography excluded pulmonary embolism. Following intensive treatment, the patient's clinical and hemodynamic status progressively improved. He was successfully extubated and discharged in satisfactory condition.

Conclusion: These cases highlight the importance of early recognition of severe toxic and hypersensitivity-related reactions, immediate stabilization of vital functions, and a systematic differential diagnostic approach in patients presenting with acute cardiorespiratory compromise. Integration of exposure history, clinical findings, cardiac biomarkers, imaging studies, and toxicological testing is essential for identifying the underlying etiology, guiding appropriate treatment, and improving clinical outcomes.

Keywords: Anaphylactic shock; Grayanotoxin poisoning; Cardiorespiratory failure; Bradyarrhythmia; Myocardial injury; Emergency medicine; Intensive care.

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PELVIC FRACTURES

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Background and context: Pelvic fractures represent some of the most severe and complex injuries encountered in emergency medicine. Modern treatment of these fractures requires a highly coordinated, multi-disciplinary approach designed to minimize initial mortality and optimize long-term physiological recovery.

Problem statement: The acute management phase poses critical challenges, primarily due to the high risk of catastrophic hemorrhage, severe hemodynamic instability, and associated intra-abdominal or retroperitoneal injuries. Managing these life-threatening conditions during the golden hour remains a paramount hurdle in emergency trauma care.

Methodology and approach: To treat these high-energy injuries properly, a standardized, aggressive protocol must be initiated immediately upon admission. This approach integrates advanced damage control resuscitation with rapid mechanical stabilization using pelvic binders or temporary external fixation. When indicated, immediate surgical interventions such as pre-peritoneal pelvic packing or angioembolization are deployed to achieve definitive hemorrhage control, followed by timed anatomical reconstruction.

Key results: Utilizing this structured acute management framework drastically minimizes early mortality rates. Furthermore, early rigid stabilization enables accelerated patient mobilization and early rehabilitation. This proactive timeline actively prevents debilitating post-traumatic complications—such as deep vein thrombosis, prolonged pulmonary dysfunction, and chronic pelvic instability—leading to the best possible functional outcomes.

Conclusion: The optimal treatment strategy for acute pelvic trauma relies heavily on swift, multidisciplinary damage control protocols. Combining immediate mechanical and physiological stabilization with early, aggressive rehabilitation forms the definitive gold standard for maximizing patient survival and restoring baseline quality of life.

Keywords: Pelvic fractures, acute trauma, hemorrhage control, early rehabilitation, damage control.

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ISOLATED INJURY OR SYSTEMIC TRAUMA? DAMAGE CONTROL RESUSCITATION IN THE DECOMPENSATED ELDERLY PATIENT

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Background: Damage Control Orthopedics (DCO) is traditionally established as a management strategy for severe polytrauma. However, in elderly and polymorbid patients, even an isolated major skeletal trauma can trigger severe systemic decompensation. This study aims to demonstrate the critical role of DCO combined with aggressive metabolic resuscitation in geriatric emergency medicine.

Case Presentation: An 84-year-old male was admitted to the First University Clinic of TSMU presenting with a comminuted subtrochanteric fracture of the right femur and post-traumatic encephalopathy/delirium. Although diagnostic workup (FAST ultrasound, chest radiography) ruled out concomitant internal organ injuries, confirming an isolated musculoskeletal trauma, the patient's baseline physiological status was highly critical. Laboratory and instrumental evaluations revealed severe metabolic lactic acidosis (lactate: 5.82 mmol/L, base excess: -9.2 mmol/L), acute azotemia (creatinine: 150.8 μmol/L), marked leukocytosis (18.91 × 10^9/L), cardiac systolic dysfunction (ejection fraction: 40%), and new-onset atrial fibrillation.

Management and Outcomes: Given the prohibitive physiological risks associated with definitive primary osteosynthesis, a DCO strategy utilizing minimally invasive plate and screw fixation was promptly implemented. Following intensive care unit admission and targeted metabolic and fluid resuscitation, a complete and rapid normalization of the patient's metabolic profile was achieved (lactate decreasing to 0.80 mmol/L). Postoperative anemia (hemoglobin: 7.9 g/dL) was successfully managed via goal-directed red blood cell transfusion, raising hemoglobin to 10.4 g/dL. Subsequently, the patient achieved stable systemic hemodynamics and significant neurological recovery.

Conclusions: This case highlights that in geriatric populations, overall trauma severity is dictated not solely by anatomical injury patterns, but by severely constrained physiological reserves. The

synergistic application of the DCO protocol and prompt metabolic resuscitation serves as a vital, life-saving intervention in managing isolated yet systemically devastating trauma.

Keywords: Damage Control Orthopedics, Geriatric Trauma, Subtrochanteric Fracture, Metabolic Resuscitation, Physiological Decompensation.

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When Every Minute Matters: Multidisciplinary Management of Catastrophic Intraventricular Hemorrhage During Childbirth — A Case Report

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Background: Acute neurological deterioration during childbirth represents a diagnostic and therapeutic challenge. Although eclampsia is a major consideration in patients presenting with seizures, intracranial hemorrhage and acute hydrocephalus must also be recognized promptly. Effective management requires rapid assessment, interdisciplinary coordination, and timely neurosurgical intervention.

Case Presentation: A 32-year-old woman developed sudden loss of consciousness and generalized tonic-clonic seizures during childbirth. March 6, 2026 upon emergency admission, she was comatose, with a Glasgow Coma Scale score of 4/15, and required immediate endotracheal intubation and mechanical ventilation. Emergency brain computed tomography revealed a left caudate-region intracerebral hematoma measuring approximately 1 × 2 × 1 cm, with diffuse intraventricular hemorrhage, ventriculomegaly, and radiological signs of intracranial hypertension. Following multidisciplinary assessment, emergency right frontal external ventricular drainage with implanted ICP was performed approximately 83 minutes after hospital admission. High-pressure xanthochromic cerebrospinal fluid was obtained intraoperatively.

Clinical Course: The patient required prolonged intensive care, respiratory support, tracheostomy, neurological surveillance, and treatment of complications. Following serial clinical and radiological assessment, the ventricular drain with ICP was removed without documented recurrence of ventricular enlargement. By April 15, the patient was hemodynamically stable, breathing spontaneously through a tracheostomy with supplemental oxygen, opening her eyes spontaneously, fixing her gaze, and attempting to follow simple commands.

Discussion: This case highlights the importance of identifying intracranial pathology in the differential diagnosis of obstetric neurological emergencies. Despite the relatively small intraparenchymal hematoma, extensive intraventricular extension and acute hydrocephalus created a life-threatening condition.

Conclusion: Timely neuroimaging, emergency cerebrospinal fluid diversion, coordinated multidisciplinary management, and sustained intensive care are essential components of treating severe intracranial hemorrhage in the peripartum period. The case provides practical lessons for improving emergency referral systems and collaborative care in Georgian hospitals.

Keywords: Intraventricular hemorrhage; childbirth; obstructive hydrocephalus; external ventricular drainage; multidisciplinary care; neurological emergency.

როდესაც ყოველი წუთი გადამწყვეტია: მშობიარობის დროს განვითარებული მასიური ინტრავენტრიკულური სისხლჩაქცევის მულტიდისციპლინური მართვა — კლინიკური შემთხვევის აღწერა

ნანა თაქთაქიშვილი[1], MD; მაგდა თორთლაძე[1], MD, PhD; პაატა ჟორჟოლიანი[1], MD, PhD; ლიკა ხორბალაძე[1], MD

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შესავალი

მშობიარობის დროს განვითარებული მწვავე ნევროლოგიური მდგომარეობის განვითარება მნიშვნელოვან დიაგნოსტიკურ და თერაპიულ გამოწვევას წარმოადგენს. მიუხედავად იმისა, რომ კრუნჩხვითი გულყრებით მიმდინარე კლინიკურ შემთხვევებში ეკლამპსია ერთ-ერთი უმნიშვნელოვანესი სავარაუდო დიაგნოზია, აუცილებელია ინტრაკრანიალური სისხლჩაქცევისა და მწვავე ჰიდროცეფალიის დროული ამოცნობა.

ეფექტური მართვა მოითხოვს პაციენტის მდგომარეობის სწრაფ შეფასებას, სხვადასხვა სპეციალობის ექიმთა კოორდინირებულ მოქმედებასა და დროულ ნეიროქირურგიულ ჩარევას.

კლინიკური შემთხვევის აღწერა

32 წლის ქალს მშობიარობის დროს განუვითარდა ცნობიერების უეცარი დაკარგვა და გენერალიზებული ტონურ-კლონური გულყრები.

2026 წლის 6 მარტს, გადაუდებელი წესით ჰოსპიტალიზაციისას, პაციენტი იმყოფებოდა კომატოზურ მდგომარეობაში. ცნობიერების დონე გლაზგოს კომის შკალით (GCS) შეადგენდა 4/15 ქულას. მდგომარეობის სიმძიმიდან გამომდინარე, საჭირო გახდა დაუყოვნებელი ენდოტრაქეული ინტუბაცია და ფილტვების ხელოვნური ვენტილაცია.

თავის ტვინის გადაუდებელი კომპიუტერული ტომოგრაფიით გამოვლინდა მარცხენა კუდიანი ბირთვის მიდამოში ლოკალიზებული, დაახლოებით 1 × 2 × 1 სმ ზომის ინტრაცერებრული ჰემატომა, სისხლის დიფუზური ინტრავენტრიკულური

გავრცელებით, ვენტრიკულომეგალიითა და ინტრაკრანიალური ჰიპერტენზიის რადიოლოგიური ნიშნებით.

მულტიდისციპლინური შეფასების საფუძველზე, ჰოსპიტალიზაციიდან დაახლოებით 83 წუთში, გადაუდებელი წესით ჩატარდა მარჯვენამხრივი ფრონტალური გარეგანი ვენტრიკულური დრენირება ინტრაკრანიალური წნევის (ICP) მონიტორინგის სისტემის იმპლანტაციით.

ინტრაოპერაციულად მიღებულ იქნა ქსანტოქრომული ცერებროსპინალური სითხე (ლიქვორი)მაღალი წნევით.

კლინიკური მიმდინარეობა

პაციენტის მდგომარეობა მოითხოვდა ხანგრძლივ ინტენსიურ თერაპიას, რესპირატორულ მხარდაჭერას, ტრაქეოსტომიის ჩატარებას, ნევროლოგიური სტატუსის დინამიკურ მონიტორინგსა და განვითარებული გართულებების მკურნალობას.

თანმიმდევრული კლინიკური და რადიოლოგიური შეფასებების საფუძველზე, ვენტრიკულური დრენაჟი ინტრაკრანიალური წნევის მონიტორინგის სისტემასთან ერთად ამოღებულ იქნა. შემდგომი დაკვირვებისას პარკუჭოვანი სისტემის განმეორებითი დილატაცია არ დაფიქსირებულა.

15 აპრილის მდგომარეობით, პაციენტი იყო ჰემოდინამიკურად სტაბილური, სუნთქავდა სპონტანურად ტრაქეოსტომული მილის საშუალებით, დამატებითი ჟანგბადის მიწოდების ფონზე. ნევროლოგიური სტატუსის შეფასებით, პაციენტი სპონტანურად ახელდა თვალებს, აფიქსირებდა მზერას და ცდილობდა მარტივი ინსტრუქციების შესრულებას.

განხილვა

წარმოდგენილი კლინიკური შემთხვევა ხაზს უსვამს ინტრაკრანიალური პათოლოგიის დროული იდენტიფიცირების მნიშვნელობას სამეანო პრაქტიკაში განვითარებული გადაუდებელი ნევროლოგიური მდგომარეობების დიფერენციული დიაგნოსტიკის პროცესში.

მიუხედავად ინტრაპარენქიმული ჰემატომის შედარებით მცირე ზომისა, სისხლის მასიურმა ინტრავენტრიკულურმა გავრცელებამ და მწვავე ობსტრუქციულმა ჰიდროცეფალიამ სიცოცხლისთვის უშუალო საფრთხის შემცველი მდგომარეობა განაპირობა.

აღნიშნული შემთხვევა წარმოაჩენს პაციენტის მდგომარეობის სიმძიმის შეფასებისას არა მხოლოდ ჰემატომის მოცულობის, არამედ მისი ანატომიური ლოკალიზაციის,

ინტრავენტრიკულური გავრცელების, ლიქვოროცირკულაციის დარღვევისა და შესაბამისი ნევროლოგიური გამოვლინებების გათვალისწინების აუცილებლობას.

დასკვნა

დროული ნეიროვიზუალიზაცია, ცერებროსპინალური სითხის გადაუდებელი გარეგანი დრენირება, კოორდინირებული მულტიდისციპლინური მართვა და უწყვეტი ინტენსიური თერაპია პერიპარტალურ პერიოდში განვითარებული მძიმე ინტრაკრანიალური სისხლჩაქცევის ეფექტური მართვის უმნიშვნელოვანეს კომპონენტებს წარმოადგენს.

წარმოდგენილი შემთხვევა იძლევა მნიშვნელოვან პრაქტიკულ გამოცდილებას საქართველოში გადაუდებელი სამედიცინო რეფერალის სისტემის სრულყოფის, სხვადასხვა სპეციალობის ექიმთა თანამშრომლობის გაძლიერებისა და კრიტიკულ მდგომარეობაში მყოფი პაციენტების მართვის ხარისხის გაუმჯობესების მიმართულებით.

საკვანძო სიტყვები: ინტრავენტრიკულური სისხლჩაქცევა; მშობიაროობა; ობსტრუქციული ჰიდროცეფალია; გარეგანი ვენტრიკულური დრენირება; მულტიდისციპლინური მართვა; გადაუდებელი ნევროლოგიური მდგომარეობა.

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OPTIMISING ANTIBIOTIC DOSING IN CRITICALLY ILL PATIENTS

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Early administration of appropriate antimicrobial therapy remains a cornerstone of sepsis management; however, timely delivery of the correct antibiotic alone does not guarantee favourable outcomes in critically ill patients with sepsis. Profound and dynamically changing physiological alterations associated with critical illness result in major alterations in pharmacokinetics (PK) and may also affect tissue penetration and pharmacodynamic (PD) target attainment. Factors such as hyperdynamic circulation, capillary leak, aggressive fluid resuscitation, vasopressor use, hypoalbuminemia, augmented renal clearance (ARC), acute kidney injury, renal replacement therapy (RRT), extracorporeal membrane oxygenation (ECMO), and burns can substantially alter drug distribution and clearance. Consequently, antimicrobial exposure becomes highly unpredictable, particularly for hydrophilic agents such as β-lactams, aminoglycosides, and glycopeptides. Underexposure risks treatment failure and may contribute to the emergence of antimicrobial resistance, whereas overexposure increases the likelihood of drug toxicity. Standard dosing recommendations, largely derived from studies in healthy volunteers or non-critically ill populations, often fail to achieve optimal pharmacokinetic/pharmacodynamic (PK/PD) targets in critically ill patients, highlighting the need for individualized antibiotic dosing strategies.

Optimizing antibiotic dosing requires a precision medicine approach that considers the patient-drug-pathogen interplay, which is profoundly altered in critically ill patients with sepsis. For hydrophilic antimicrobials, initial dosing should compensate for expanded volumes of distribution using loading doses, which are generally determined by the volume of distribution rather than renal function. Maintenance dosing must then be adjusted according to dynamic changes in organ function and drug clearance. Alternative administration strategies, including extended or continuous infusions of time-dependent antibiotics such as β-lactams, can improve PK/PD target attainment and may improve clinical outcomes, particularly in patients with severe infections, high pathogen minimum inhibitory concentrations (MICs), or markedly altered PKs. Therapeutic drug monitoring (TDM) further enables individualized dose adjustment by integrating measured antibiotic concentrations with PK/PD targets, helping to maximize efficacy while minimizing toxicity. Emerging approaches such as model-informed precision dosing (MIPD) offer promising opportunities to advance personalized antimicrobial therapy, although widespread implementation in routine clinical practice remains limited.

Antibiotic dosing optimization should be regarded as a fundamental component of antimicrobial stewardship. A structured approach involving early assessment, individualized dosing, therapeutic monitoring, incorporation of pathogen susceptibility and MIC data when available, and continuous reassessment can improve target attainment, reduce toxicity, limit resistance emergence, and enhance clinical outcomes. In critically ill patients, one dose does not fit all; precision dosing is essential to deliver effective and safe antimicrobial therapy.

Keywords:
Critical illness; Antibiotic dosing optimization; Pharmacokinetics/Pharmacodynamics (PK/PD); Therapeutic drug monitoring (TDM); Precision dosing

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RAPID DIAGNOSTICS AND ANTIMICROBIAL STEWARDSHIP (AMS): TREAT EARLY, REFINE RAPIDLY AND AVOID UNNECESSARY ANTIBIOTICS

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Rapid diagnostic tests (RDTs) have emerged as important tools for improving infection management and strengthening antimicrobial stewardship (AMS) programmes. Their principal value lies in accelerating pathogen identification and the detection of clinically relevant resistance mechanisms, thereby enabling earlier optimisation of antimicrobial therapy. Although conventional microbiological cultures remain the diagnostic gold standard, definitive identification and susceptibility results require at least 72 hours. Consequently, clinicians frequently initiate empirical broad-spectrum antimicrobial therapy while awaiting microbiological confirmation, a practice that may contribute to antimicrobial resistance (AMR), increase drug-related toxicity, and expose patients to unnecessary or suboptimal treatment. RDTs have been developed to address these limitations by providing clinically actionable microbiological information within hours rather than days.

A broad range of rapid diagnostic platforms is now available, including multiplex polymerase chain reaction (PCR) assays, matrix-assisted laser desorption ionisation-time of flight mass spectrometry (MALDI-TOF MS), sequencing-based technologies, and rapid phenotypic antimicrobial susceptibility testing. By substantially reducing diagnostic turnaround times, these technologies facilitate earlier evidence-based therapeutic decisions and support more precise antimicrobial use.

For bloodstream infections (BSIs), there is strong evidence that RDTs can positively impact antimicrobial use. A recent large systematic review and network meta-analysis involving more than 25,000 patients demonstrated that RDTs improve outcomes only when linked to active AMS programmes, reducing time to optimal therapy and improving survival. Importantly, RDTs provided additional survival benefit even in centres with established AMS programmes. Another systematic review and meta-analysis showed that RDTs improved time to targeted treatment, hospital length of stay, and mortality when combined with active communication. Indeed, RDTs, AMS, and active communication consistently outperformed test-only approaches, highlighting

the importance of multidisciplinary collaboration, effective communication between microbiology laboratories and treating clinicians, and prompt stewardship-led intervention.

In respiratory infections, particularly hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP), syndromic multiplex PCR panels enable simultaneous detection of multiple bacterial pathogens and resistance determinants directly from respiratory specimens within a few hours. These assays can improve pathogen-directed therapy, facilitate earlier escalation or de-escalation of treatment, and reduce unnecessary antibiotic exposure. However, current panels do not encompass all pathogens or resistance mechanisms, and molecular detection cannot reliably distinguish true infection from colonisation. Interpretation therefore requires integration with the clinical presentation, local epidemiology, prior colonisation status, antimicrobial exposure, and other microbiological findings.

Overall, RDTs represent a valuable component of contemporary infection management. They are not intended as standalone tests or to replace conventional microbiology but rather to complement it. Benefits are achieved when RDTs are integrated into robust AMS programmes, supported by effective communication and informed clinical decision-making. This combined approach enables more timely and targeted antimicrobial therapy while promoting responsible antimicrobial use.

Key words: Rapid diagnostic tests; Antimicrobial stewardship; Bloodstream infections; Pneumonia.