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ABSTRACT BOOK

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MaPaCi8

Conferința Națională

"Managementul Pacientului Critic în Patologia Infecțioasă" - ediția a 8-a

8–10 Iulie 2026 · Târgu Mureș

Program Științific

Miercuri, 8 iulie 2026

11:00 – 14:00 **Înregistrare participanți**
Aula Facultății de Farmacie – UMFST G. E. Palade Târgu Mureș

13:00 – 14:20 **Welcome Coffee**

14:20 – 14:30 **Deschiderea oficială a Conferinței MaPaCi 8**

14:30 – 16:45	SESIUNEA 1 HIV: prevenția pe primul loc – de la noile infecții la pacientul critic	
	Moderatori Dr. Mariana Mărdărescu · Conf. dr. Florentina Dumitrescu	
14:30 – 15:00	Prevenția este pe primul loc! Drumul către zero cazuri noi de HIV!	*Mariana Mărdărescu*
15:00 – 15:30	Simpozion GILEAD Importanța unei bariere genetice înalte la rezistență pentru succesul pe termen lung în infecția HIV	*Anca Meda Văsieșiu*
15:30 – 15:45	Pacienți critici cu infecție HIV în Secția de Terapie Intensivă (ATI)	*Florentina Dumitrescu*
15:45 – 15:55	Coinfecția HIV–CMV: serie de cazuri la trei pacienți	*Erzsebet Iringo Zaharia-Kezdi*
15:55 – 16:05	HIV și alte infecții cu transmitere sexuală	*Norbert Kovács*
16:05 – 16:15	Mielita transversă la un pacient HIV pozitiv	*Andrea Incze*
16:15 – 16:45	Simpozion MSD Personalizarea terapiei antiretrovirale – DORΛ – Durabilă. Optimală. Robustă. Actualizată – Delstrigo, o alegere strategică în era INSTI	Anca Meda Văsieșiu

16:45 – 16:55 **Pauză de cafea**

16:55 – 19:00	SESIUNEA 2 Infecții severe în Terapia Intensivă: rezistența antimicrobiană, diagnostic molecular și provocări clinice (I)	
	Moderatori: Prof. dr. Irina Dumitru · Prof. dr. Claudia Cambrea	
16:55 – 17:05	Profilul pacientului critic cu infecție severă transferat în terapie intensivă	***Adrian-Vlad Pop***
17:05 – 17:15	Pneumonia severă – motiv de internare în Terapia Intensivă: aspecte etiologice și evolutive	***Nina Bodnar***
17:15 – 17:25	Managementul utilizării antimicrobienelor la un pacient cu politraumă severă și infecție cu *Mucor circinelloides*	***Mădălina Brukner***

Miercuri, 8 iulie 2026

17:25 – 17:35	De la pneumonia bacilară Gram-negativă XDR la candidemia cu *Candidozyma auris*: provocările spitalizării prelungite în Terapia Intensivă	***Alexandra Răsmeriță***
17:35 – 17:45	Predictori ai evoluției nefavorabile în pneumonia cu *Acinetobacter baumannii*: rolul sepsisului și al insuficienței de organ	***Cătălina Luca***
17:45 – 17:55	Infecția cu *Clostridioides difficile* în ATI post-COVID: predictori ai mortalității la pacienții critici	***Iulia Pascu***
17:55 – 18:05	Bacteriuria asociată cateterului în ATI: între colonizare și infecția propriu-zisă – o provocare pentru managementul utilizării antimicrobienelor	***Cristina Gîrbovan***
18:05 – 18:15	Performanța interleukinei-6 ca marker prognostic în sepsis: un studiu comparativ bazat pe analiza ROC	***Raluca Tertess***
18:15 – 18:30	Rezistența antimicrobiană **–** Rolul diagnosticului molecular în infecțiile severe și MDR	***Irina Dumitru***
18:30 – 18:45	Sindromul Post-sepsis (SPS)	Dumitru Cârstina
18:45 – 19:00	Rezultate funcționale și respiratorii în sindromul post-terapie intensivă: o revizuire narativă cu perspective dintr-o clinică de reabilitare respiratorie	*Camelia Dascălu*

20:00 Cină

Joi, 9 iulie 2026

09:00 – 10:15	SESIUNEA 3 Cazuri dificile la pacientul critic infecțios	
	Moderatori: Prof. dr. Anca-Meda Văsieșiu · Prof. dr. Cătălina Luca	
09:00 – 09:15	Endocardita de valvă aortică protetică cauzată de *Listeria monocytogenes* – diagnostic întârziat după embolizări sistemice recurente și distrucție perivalvulară extinsă	*Anca Meda Văsieșiu*
09:15 – 09:30	Cât de severă poate fi listerioza?	*Victoria Bîrluțiu*
09:30 – 09:45	Boala invazivă cu *Neisseria meningitidis*: provocări actuale	*Cătălina Luca*
09:45 – 09:55	Spectrul clinic al infecției meningococice: lecții din cazuri interesante	*Cristina Mareș*
09:55 – 10:05	Pneumonie necrozantă, șoc septic și tromboză venoasă profundă: o prezentare fatală a infecției invazive cu MSSA în copilărie	*Ema Burlacu*
10:05 – 10:15	Infecția invazivă cu *Staphylococcus aureus* meticilino-sensibil: serie de trei cazuri	*Akos Vince Andrejkovits*

10:15 – 11:45	SESIUNEA 4 Infecții virale severe în ATI: De la patogeni emergenți la boală critică	
	Moderatori: Prof. dr. Simin Aysel Florescu · Prof. dr. Oana Săndulescu	
10:15 – 10:30	Infecția cu hantavirus – între endemicitate și focar epidemic	*Simin Aysel Florescu*
10:30 – 10:45	Infecția cu hantavirus – de la suspiciunea clinică la diagnosticul modern	*Maria-Elena Cocuz*
10:45 – 11:00	Prin ce diferă focarul de virus Bundibugyo de focarele anterioare de virus Ebola?	*Corneliu Popescu*
11:00 – 11:15	Managementul multidisciplinar al insuficienței hepatice fulminante în contextul hepatitei virale	*Oana Săndulescu*
11:15 – 11:25	Predictori ai mortalității în COVID-19 sever: impactul suprainfecțiilor respiratorii cu germeni ESKAPE	*Lidia Plăcintă*
11:25 – 11:35	Sepsis viral după chirurgie cardiacă complexă: bypass cardiopulmonar prelungit, disfuncție imună tranzitorie și infecție bacteriană secundară	*Cristiana Penea*
11:35 – 11:45	Determinanți ai gripei severe care necesită terapie intensivă: o analiză comparativă	*Tudor Fleșeriu*

11:45 – 12:00 Pauză de cafea

Joi, 9 iulie 2026

12:00 – 12:50	**SESIUNEA 5** **Rezistența antimicrobiană (AMR): impact, detecție și control (I)**	
	Moderatori: Prof. dr. Adriana Hristea · Prof. dr. Mihaela Lupșe	
12:00 – 12:20	Infecții asociate asistenței medicale cauzate de organisme rezistente la carbapeneme: o amenințare clinică în creștere	*Adriana Hristea*
12:20 – 12:35	Prevalența portajului rectal de organisme rezistente la carbapeneme: date din proiectul REVERSE la Spitalul Clinic Județean Mureș	*Eveline Gorea*
12:35 – 12:50	Utilitatea portajului în infecțiile cu bacili Gram-negativi MDR	*Cristian Niculae*
12:50 – 13:10	Simpozion SOBI De la dovezi la practica clinică în infecțiile cu germeni Gram-negativi rezistenți la carbapeneme	Mihaela Lupșe

13:10 – 14:10 Prânz

14:00 – 14:45	**SESIUNEA 6** **Infecția HIV între realitatea clinică și viitorul tehnologic: tendințe recente și perspective**	
	Moderator: Acad. Prof. dr. Adrian Streinu-Cercel	
14:00– 14:30	Calculul cuantic biologic în era eradicării HIV	*Adrian Streinu-Cercel*
14:30 – 14:45	Tendințe în boala HIV avansată la momentul diagnosticului în perioada 2014–2025	*Adriana Topan*
14:45 – 15:25	Simpozion El Pharma Acum este momentul să tratăm, gândindu-ne la viitor 1. DOVATO: De la evidente din studiile clinice la practica clinica, la pacientii recent diagnosticati 2. DOVATO: De la evidente din studiile clinice la practica clinica, la pacientii cu supresie virusologică	Cristian Jianu Iringo Erzsebet Zaharia-Kezdi

15:25 – 16:25	**SESIUNEA 7** **Sepsis și managementul pacientului critic – diagnostic rapid și tehnologii moderne**	
	Moderatori: Conf. dr. Eva Szekely · Dr. Mirela Flonta · Dr. Marina Indreaș	
15:25 – 15:45	Cum panourile multiplex sindromice transformă procesul decizional clinic în infecțiile severe	*Mirela Flonta*
15:45 – 16:05	Cultura încă salvează vieți – rolul diagnosticului convențional alături de metodele moleculare	*Eva Szekely*

Joi, 9 iulie 2026

16:05 – 16:25	Ghidurile EUCAST pentru testarea sensibilității la antibiotice, farmacocinetica/farmacodinamica antibioticelor și medicina personalizată	*Marina Indreaș*
16:25 – 16:45	Simpozion CLINILAB Diagnosticul rapid și tehnologiile moderne în diagnosticul infecțiilor: soluții inovatoare de diagnostic molecular în timp real – PCR multiplex (Sistemul MIC qPCR IVD – Bioeksen)	Diana Coste

16:45 – 17:00 Pauză de cafea

17:00 – 17:35	**SESIUNEA 8** **Sepsis și managementul pacientului critic: Stewardship antimicrobian în ATI**	
	Moderatori: Prof. dr. Mihaela Lupșe · Prof. dr. Adriana Hristea	
17:00 – 17:20	Stewardship antimicrobian în terapie intensivă (ATI)	Mihaela Lupșe
17:20 – 17:35	Sepsisul cu bacterii Gram-negative rezistente la carbapeneme: cum alegem antibioticoterapia în practica actuală	Violeta Melinte

17:35 – 19:10	**SESIUNEA 9** **Infecții severe în populațiile speciale: pacientul critic și imunocompromis**	
	Moderatori: Conf. dr. Maria-Elena Cocuz · Conf. dr. Ruxandra Moroti	
17:35 – 17:50	Riscul de sepsis cu germeni oportuniști la copiii cu malnutriție	*Lorena Meliț*
17:50 – 18:00	Managementul infecției cu *Pseudomonas aeruginosa* la un pacient pediatric cu fibroză chistică	*Crina-Larisa Muntean*
18:00 – 18:10	Sepsis sever secundar unui abces renal în sindromul Kabuki: o prezentare clinică rară și provocatoare	*Andrea Stoica*
18:10 – 18:20	Furtuna perfectă în prima copilărie: sindrom hemolitic uremic asociat STEC și sindrom septic la un pacient cu malformații congenitale complexe	*Mihai-Daniel Mocanu*
18:20 – 18:35	Sepsis respirator sever complicat cu leziune renală acută și deshidratare hipernatremică la un adolescent cu dizabilitate neurologică complexă: o provocare terapeutică	*Oana Mărginean*
18:35 – 18:50	O cascadă de episoade septicemice și deficit critic de micronutrienți la un pacient fragil, dializat cronic	*Ruxandra Moroti*
18:50 – 19:00	Complicații fungice la pacienți pediatrici oncologici imunocompromiși	*Andrea Dincă*
19:00 – 19:10	Limitele terapeutice în imunosupresia severă – aspergiloză pulmonară refractară la un pacient pediatric cu LAL: prezentare de caz	*Zsuzsanna Papp*

20:00 Cină

Vineri, 10 iulie 2026

08:40 – 09:00	Simpozion EWOPHARMA Modularea răspunsului imun în bolile virale – de ce este importantă?	Anca-Meda Văsieșiu

09:00 – 10:05	**SESIUNEA 10** **Varia**	
	Moderatori: Conf. dr. Violeta Briciu · Conf. dr. Corneliu Popescu	
09:00 – 09:15	Infecții emergente transmise prin căpușe în Europa: o abordare One Health	*Violeta Briciu*
09:15 – 09:25	Evoluția clinică și tratamentul endocarditei infecțioase	*Iulia Diana Sabău*
09:25 – 09:35	Profiluri inflamatorii comparative la pacienți hemodializați și non-dializați cu boli infecțioase: dovezi de disfuncție imună dincolo de biomarkerii convenționali	*Ștefan-Rareș Cătălina-Câmpean*
09:35 – 09:45	Un punct de răscruce diagnostic: infecția concomitentă cu *Clostridioides difficile* și debutul unei colite ulcerative severe la un adult tânăr	*Elena Vanda Ciudin*
09:45–10:05	Simpozion CHIMIMPORTEXPORT PLURIMEX: Infecții dificil de tratat: fosfomicina IV partener de încredere în combinațiile antibiotice	Anca Meda Văsieșiu

10:05 – 11:25	**SESIUNEA 11** **Rezistența antimicrobiană (AMR): impact, detecție și control (II)**	
	Moderatori: Prof. dr. Leonard Azamfirei · Prof. dr. Prisco Piscitelli	
10:05 – 10:30	The challenge of antimicrobial resistance in intensive care setting	*Prisco Piscitelli*
10:30 – 10:55	Inteligența artificială și inovația digitală în predicția și prevenirea rezistenței antimicrobiene (AMR)	*Leonard Azamfirei*
10:55 – 11:10	Impactul global și consecințele clinice ale rezistenței antimicrobiene	*Mircea Stoian*
11:10 – 11:25	Strategii de testare și supraveghere pentru identificarea rezistenței antimicrobiene (AMR)	*Almasy Emoke*

11:25 – 11:35 **Pauză de cafea**

Vineri, 10 iulie 2026

11:35 – 13:55	SESIUNEA 12 Managementul pacientului pediatric cu infecție severă	
	Moderatori: Prof. dr. Victoria Bîrluțiu · Conf. dr. Violeta Briciu	
11:35 – 11:45	Dincolo de scorurile inflamatorii tradiționale: indicele leucocitar de glucoză ca un nou predictor al severității clinice în meningita infecțioasă pediatrică	Alexandra Ioana Asztalos
11:45 – 11:55	Sepsis cu punct de plecare pulmonar la un sugar	*Zsuzsanna Gáll*
11:55 – 12:05	Statusul inflamator în sepsisul neonatal cu debut precoce	*Maria-Andrea Răcean*
12:05 – 12:15	Când o durere în gât nu este doar o durere în gât: complicații pediatrice severe ale infecției cu streptococ de grup A	*Ana-Maria Koller*
12:15 – 12:25	Provocări în diagnosticul și tratamentul pneumoniei abcedate la un pacient pediatric	*Adriana Vodă*
12:25 – 12:35	Cefalee cronică, un simptom simplu care poate ascunde diagnostice grave	*Sanda Voicu*
12:35 – 12:45	Pneumonie de aspirație la un copil cu bronșiolită acută ușoară	*Virginia Bodescu*
12:45 – 12:55	Biomarkeri diagnostici pentru diferențierea bacterian-virală la copiii febrili: performanță și implicații pentru prevenirea infecțiilor severe	*Mădălina-Delia Coman*
12:55 – 13:05	Provocări în diagnosticul și managementul pneumoniei complicate cu revărsat pleural la un pacient pediatric	*Antonia Rîmbeț*
13:05 – 13:25	Simpozion TERAPIA Terapia completă în tratamentul tuturor tipurilor de diaree	*Anca Meda Văsieșiu*
13:25 – 13:35	Insuficiență respiratorie acută secundară tuberculozei miliare la un sugar de 4 luni	*Reka Solyom*
13:35 – 13:45	Un caz de pneumonie bazală complicată cu infarct splenic	*Zsuzsanna Moreh*
13:45 – 13:55	Meningoencefalită cu parechovirus uman la un nou-născut cu lichid cefalorahidian normal: o provocare diagnostică	*Ana Stan Muntean*

13:55 – 14:15 Închiderea Conferinței MaPaCi 8

14:15 Prânz

SEVERE INFECTIONS IN THE INTENSIVE CARE UNIT (ICU): ANTIMICROBIAL RESISTANCE, MOLECULAR DIAGNOSTICS, AND CLINICAL CHALLENGES

FUNCTIONAL AND RESPIRATORY OUTCOMES IN POST-INTENSIVE CARE SYNDROME: A NARRATIVE REVIEW WITH INSIGHTS FROM A RESPIRATORY REHABILITATION CLINIC

Doina-Clementina Cojocaru [1]

[1] Department of Internal Medicine I, Grigore T. Popa University of Medicine and Pharmacy, Iasi

Background: Post-Intensive Care Syndrome (PICS) is increasingly recognised as a major contributor to long-term morbidity among survivors of critical illness. Respiratory dysfunction, reduced exercise capacity, muscle weakness, and impaired quality of life frequently persist long after intensive care unit (ICU) discharge, creating a substantial burden for patients and healthcare systems. **Material and methods:** A focused narrative review of MEDLINE/PubMed and Cochrane Library publications published between 2003 and 2026 was conducted. The review emphasised international clinical practice guidelines, randomized controlled trials, prospective cohort studies, systematic reviews, and meta-analyses addressing respiratory and functional outcomes after critical illness. Evidence was complemented by practical insights derived from a specialised respiratory rehabilitation setting. **Results:** Persistent respiratory impairment remains one of the most common manifestations of PICS. Reduced diffusing capacity of the lung for carbon monoxide (DLCO), restrictive ventilatory defects, decreased six-minute walk distance (6MWD), and ongoing dyspnoea have been reported for months to years following ICU discharge. Although pulmonary function and exercise capacity generally improve over time, a substantial proportion of survivors continue to demonstrate functional limitations beyond one year. Early mobilisation, inspiratory muscle training, structured pulmonary rehabilitation programmes, multidisciplinary post-ICU clinics, and telerehabilitation have shown potential benefits in improving recovery, although evidence remains heterogeneous across studies. Delayed referral to rehabilitation services and inconsistent implementation of guideline-based follow-up continue to represent important barriers in routine practice. **Conclusions:** Respiratory and functional impairments are prevalent, persistent, and clinically modifiable components of PICS. Early identification of at-risk patients, structured respiratory rehabilitation, and multidisciplinary follow-up should be integrated into routine post-ICU care pathways to optimise long-term recovery and quality of life among critical illness survivors.

Keywords: Post-Intensive Care Syndrome, respiratory rehabilitation, pulmonary function, critical illness survivors, DLCO

SEVERE PNEUMONIA – CAUSE FOR ADMISSION TO THE ICU: ETIOLOGIC AND EVOLUTIVE ASPECTS

Nina Ioana Bodnar[1], Cristina Elena Gîrbovan[1], Erzsebet Iringo Zaharia-Kezdi[1], Andrea Incze[1], Akos Vince Andrejkovits[1], Butoi Alina[1], Catalina-Cimpean Stefan-Rares[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Pneumonia is one of the leading infectious causes of death in both adults and children worldwide. Mortality and morbidity are higher among risk groups, including extreme ages and patients with comorbidities. **Material and methods:** We reviewed a number of 143 patients admitted to the Intensive Care Unit (ICU) via Infectious Diseases Clinic I, department of the County Clinical Hospital Mures, over a 12-months period, from June 2025 to May 2026. We analyzed the patients' characteristics, etiologic agents and evolution. **Results:** The average age of the patients' group was 71 years, while 73.42% of them were over 65 years-old. All patients who required hospitalization in the ICU had pre-existing comorbidities: cardio-vascular, metabolic, respiratory, neurologic, renal or hepatic. The average duration of hospitalization was 16.45 days, with extremes between less than 24 hours up to over 3 months. Over half of the patients – 56.06% had fatal evolution, in spite of the complex treatment, including antimicrobials, metabolic rebalancing and life support. **Conclusions:** Severe forms of pneumonia are one the main causes of admission to the ICU in patients of advanced age, with associated chronic diseases, often leading to poor outcome.

Keywords: pneumonia, intensive care unit, fatal outcome

CATHETER-ASSOCIATED BACTERIURIA IN THE ICU: BETWEEN COLONIZATION AND TRUE INFECTION — A CHALLENGE FOR ANTIMICROBIAL STEWARDSHIP.

Cristina Elena Gîrbovan[1], Asztalos Alexandra Ioana [1], Mihai Stanciu[1], Nina Ioana Bodnar[1], Adrian Vlad Pop[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Catheter-associated bacteriuria is common in critically ill patients and poses significant challenges in distinguishing colonization from urinary tract infection, especially in the context of antimicrobial resistance and multiple infectious sites. The aim of our study was to evaluate the microbiological and clinical profile of ICU patients with positive urine cultures from catheter-collected urine and to identify elements useful for differentiating colonization from urinary tract infection. **Material and methods:** We conducted a retrospective, observational study on a cohort of 32 patients with positive urine cultures obtained exclusively from catheter urine, admitted to the ICU between January and May 2026. Demographic data, isolated etiologic agents, antibiotic resistance profiles according to susceptibility testing, associated comorbidities, and discharge status were recorded. **Results:** A total of 36 positive catheter urine cultures were recorded, corresponding to 32 unique patients. Sex distribution was balanced: 17 women (53%) and 15 men (47%), with a mean age of 72.4 years. Only 3 patients originated from surgical wards. Frequently associated comorbidities were arterial hypertension (73%), diabetes mellitus (41%), obesity (22%), chronic obstructive pulmonary disease (14%), and a history of stroke (16%). Oncologic disease was present in 4 patients (12.5%). Overall mortality in the cohort was 71.9%. The most frequently isolated pathogens were: *Enterococcus faecalis* (25%), *Klebsiella pneumoniae* (25%), *Enterococcus faecium* (16.7%), *Escherichia coli* (13.9%), *Acinetobacter baumannii* (5.6%), *Proteus mirabilis* (5.6%), with single isolates of *Pseudomonas aeruginosa*, *Citrobacter freundii*, *Morganella morganii* and *Candida glabrata*. The resistance profile was alarming for *Klebsiella pneumoniae*, with 7 CPE/XDR strains; 3 *Enterococcus faecium* strains were resistant to vancomycin; there were 2 ESBL-producing *E. coli* strains; and both *Acinetobacter* strains were XDR. **Conclusions:** In critically ill patients with urinary catheters, the interpretation of a positive urine culture must be strictly based on the clinical context, since isolation of a microorganism, including multidrug-resistant strains, may indicate either colonization or true infection. The high prevalence of CPE, VRE, and XDR strains severely limits therapeutic options and underscores the need for rigorous implementation of antimicrobial stewardship programs and healthcare-associated infection prevention measures.

Keywords: urinary tract infection, bacteriuria, urinary catheter, ICU

CLOSTRIDIOIDES DIFFICILE INFECTION IN THE POST-COVID INTENSIVE CARE UNIT IN CRITICALLY ILL PATIENTS: PREDICTIVE FACTORS OF MORTALITY

Iulia Pascu[1], Robert Lado[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: *C. difficile* infection (CDI) triggers systemic impairment, where intensive care unit (ICU) prognosis is driven by organ dysfunction and comorbidities rather than isolated colitis. This study identifies predictive factors for in-hospital mortality. **Material and methods:** This retrospective study analyzed 46 CDI patients admitted to the post-COVID-19 ICU at Mureș County Clinical Hospital (May 2022–March 2026). Data regarding demographics, clinical presentation, and biological parameters were gathered from medical records. The ATLAS score evaluated local colitis severity through age, temperature, white blood cells (WBC), systemic antibiotics, and creatinine. The Charlson Index measured baseline comorbidities and age categories, stratifying chronic diseases into three severity subgroups (1, 2, or 3 points). The SOFA score assessed acute failure across 6 major systems: respiratory, cardiovascular, central nervous system, renal, hepatic, and coagulation. Statistical analysis compared parameters between deceased (n=30) and survivor (n=16) groups. One patient with incomplete local data was excluded exclusively from the ATLAS cohort (n=45). **Results:** The cohort mortality rate was 65% (n=30), with severe clinical forms predominated (61%). The most frequent comorbidities were cardiovascular, gastrointestinal, and respiratory (78% each). Unfavorable outcomes significantly associated with higher SOFA, ATLAS, Charlson scores, creatinine, and WBC, whereas albumin, hemoglobin, hematocrit, and C reactive protein showed no statistical discrimination. Comparative analysis revealed: SOFA score was the strongest mortality predictor (p=0.0002), with a mean of 9.20 in deceased patients versus 4.05 in survivors. Stratification showed that an initial SOFA >7 affected 47.83% of the cohort, marking severe dysfunction. Out of 19 sepsis-related deaths, 11 had pure abdominal sepsis, while 8 involved extra-abdominal sources. Charlson Index confirmed that baseline pathology accelerated death

(p=0.0356), with a mean of 7.72 points in deceased vs. 6.23 in survivors; 76.08% scored >5, indicating critical biological frailty. ATLAS score confirmed high baseline colitis severity (77.77% scoring 4–7), though its mortality discriminative capacity was narrower (mean 5.13 deceased vs. 4.29 survivors, p=0.022). **Conclusions:** CDI in the ICU carries high mortality dictated by systemic inflammatory response and multiorgan dysfunction (sepsis) rather than isolated intestinal damage. SOFA, ATLAS, and Charlson scores hold valuable early prognostic value.

Keywords: *Clostridioides Difficile*, post-COVID 19, intensive care, mortality, deceased

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PREDICTORS OF POOR OUTCOMES IN *ACINETOBACTER BAUMANNII* PNEUMONIA: THE ROLE OF SEPSIS AND ORGAN FAILURE

Ioana Adelina Stoian[1,2], Bianca Balas Maftei[1,3], Luca Mihaela-Catalina[1,3], Carmen Manciuc[1,3]

[1]Doctoral School, Grigore T. Popa University Of Medicine And Pharmacy, Iasi, Romania;
[2]Clinical Hospital Of Pneumology, Iasi, Romania;
[3]"Sfânta Parascheva" Clinical Hospital For Infectious Diseases, Iasi, Romania

Background: *Acinetobacter baumannii* pneumonia remains a major challenge in hospitalized patients due to its frequent association with antimicrobial resistance and high mortality rates. Identifying clinical factors associated with unfavorable outcomes may improve early risk assessment and patient management. **Material and methods:** A retrospective cohort study was conducted in patients with microbiologically confirmed *Acinetobacter baumannii* pneumonia admitted to a tertiary pneumology center. Demographic data, clinical characteristics, inflammatory biomarkers, renal function parameters, and outcomes were analyzed and compared between survivors and non-survivors. **Results:** Mortality was strongly associated with indicators of severe systemic illness, particularly sepsis, respiratory failure requiring mechanical ventilation, and progressive organ dysfunction. Patients with ventilator-associated pneumonia experienced a more severe clinical course and poorer outcomes. Renal impairment developing during hospitalization was significantly more frequent among non-survivors, suggesting a close relationship between worsening kidney function and mortality risk. Persistent inflammatory response was also associated with adverse evolution. **Conclusions:** In patients with *Acinetobacter baumannii* pneumonia, mortality appears to be primarily driven by disease severity and the development of organ dysfunction rather than microbiological factors alone. Early recognition of sepsis, respiratory compromise, and renal deterioration may facilitate improved prognostic assessment and support timely therapeutic interventions in this high-risk population.

Keywords: *Acinetobacter baumannii*, pneumonia, sepsis, acute kidney injury, mortality

PROFILE OF CRITICALLY ILL PATIENTS WITH SEVERE INFECTIONS ADMITTED IN THE INTENSIVE CARE UNIT

Adrian Vlad Pop[1], Tudor Fleșeriu[1], Alexandra Ioana Asztalos[1], Cristina Elena Gîrbovan[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Infectious diseases encompass broad spectrum of pathologies, ranging from community-acquired infections and sepsis to opportunistic and healthcare associated infections, each requiring specific distinct diagnostic and therapeutic approaches. Critically ill patients represent a distinct subgroup, requiring intensive care due to life-threating complications. Their status can be altered at presentation or may progressively worsen due to immune status or comorbidity burden. The study aimed to characterize the clinical, biological and microbiological profile of patients transferred to the intensive care unit (ICU) from the infectious diseases department over a two-year period. **Material and methods:** We conducted a retrospective, cross-sectional, observational analysis including all patients admitted in the 1st Infectious Diseases Clinic, Mureș County Hospital, between January 2024 – December 2025 and required intensive care treatment due to severe infection or associated life-threatening complications. We collected data from the discharge papers. Demographics data, comorbidities, indications for ICU transfer, clinical parameters (oxygen saturation, blood pressure, Glasgow Coma Scale), laboratory findings at transfer, immunosuppressive conditions, organ support requirements, ICU length of stay and clinical outcomes were collected from medical records. **Results:** A total of 257 patients were included, with a balanced sex distribution, the majority were elderly with a mean age of 67.9 years and 42.6% being 75 years or older. The comorbidities were a significant burden with 38% of the patients presenting at least three major comorbidities, cardiovascular disease and diabetes mellitus were the most frequent. Acute respiratory failure was the leading cause for ICU transfer standing at about 32% of cases, followed by sepsis and hemodynamic failure. Pulmonary infections represented the most common source of sepsis, whereas urinary and skin/ soft tissue infections were less frequent. Vasopressor/ inotropic support or invasive mechanical ventilation were required in approximately half of the cases. Multidrug-resistant (MDR) pathogens were identified in 54-60% of the cases. Overall, in-hospital mortality reached 45.5% while the mean ICU stay was 8.4 days. **Conclusions:** Patients with severe infections requiring ICU transfer are predominantly elderly, multimorbid and vulnerable individuals, most commonly affected by respiratory infections. The high prevalence of organ support requirements, MDR pathogens and mortality underscores the importance of early severity assessment, antimicrobial resistance surveillance and multidisciplinary management strategies.

Keywords: infectious diseases, intensive care, multidrug resistance, sepsis, severity

FROM XDR GRAM-NEGATIVE BACILLARY PNEUMONIA TO *CANDIDOZYMA AURIS* CANDIDEMIA: THE CHALLENGES OF PROLONGED INTENSIVE CARE UNIT HOSPITALIZATION

Alexandra Resmeriță[1], Adrian Vlad Pop[1], Cristina Elena Gîrbovan[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Prolonged hospitalization in intensive care units (ICUs) represents a major risk factor for the development of healthcare-associated infections (HAIs), particularly in patients with severe neurological disorders and prolonged immobilization. Exposure to invasive procedures and repeated use of broad-spectrum antibiotics promote the selection of multidrug-resistant microorganisms, including extensively drug-resistant (XDR) strains, as well as the emergence of fungal infections such as *Candidozyma auris*. **Material and methods:** We present the case of a 51-year-old female patient with multiple system atrophy, cerebellar type (MSA-C), spastic tetraparesis, parkinsonian syndrome, who was admitted to the 1st Infectious Diseases Clinic, Târgu Mureș, from November 4th, 2025, to January 22nd, 2026, for extensive right lower lobe pneumonia. The clinical course was monitored throughout the 79-day hospitalization, including more than 75 days in the intensive care unit (ICU), through clinical assessments, serial computed tomography (CT) examinations, and repeated microbiological evaluations. **Results:** Following an initial course marked by severe respiratory failure requiring orotracheal intubation, mechanical ventilation, and subsequently tracheostomy, the patient developed multiple HAIs caused by pathogens with extensive antimicrobial resistance profiles. Sequential tracheal aspirate cultures identified carbapenem-resistant *Acinetobacter baumannii* and CPE/XDR *Klebsiella pneumoniae* (NDM, OXA-48). On day 63 of hospitalization, worsening sepsis led to the identification in blood cultures of a coinfection with *Candidozyma auris* and methicillin-

resistant *Staphylococcus aureus* (MRSA). The clinical course was further complicated by bilateral pleural effusions, minimal pericarditis, left sphenoidal sinusitis, severe colitis, significant pancytopenia, and severe electrolyte disturbances. The implementation of targeted antibacterial and antifungal therapy, combined with infection control measures and comprehensive intensive care support, resulted in a favorable clinical response, with respiratory and hemodynamic stabilization ultimately allowing hospital discharge. **Conclusions:** This case illustrates the increased risk of healthcare-associated infections in critically ill patients with advanced neurological disease and prolonged exposure to invasive procedures and antimicrobial therapy. Candidemia due to *Candidozyma auris* highlights the need for active microbiological surveillance and susceptibility-guided therapy. Antimicrobial stewardship and strict infection control measures are essential to limit nosocomial transmission.

Keywords: *Candidozyma auris*, intensive care unit, healthcare-associated infection

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INVASIVE POST-TRAUMATIC MUCORMYCOSIS DUE TO *MUCOR CIRCINELLOIDES* ASSOCIATED WITH *BACILLUS CEREUS* AND *STENOTROPHOMONAS MALTOPHILIA* AFTER SEVERE POLYTRAUMA

Madalina Cristina Brukner[1], Pal Fodor[2], Dan Zolog Schiopea[2], Bianca Liana Grigorescu[3], Stefania Raluca Fodor[3]

[1] Department of Anesthesiology and Intensive Care Medicine I, Clinical County Emergency Hospital Targu Mures

[2] Department of Orthopedics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[3] Department of Anesthesiology and Intensive Care Medicine I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: *Mucor* is a genus off fast growing mold that are ubiquitously in the environment, commonly found in soil, decaying matter and plant surfaces. Although mucormycosis usually develops in immunocompromised patient, recently has been documented in healthy trauma patients. Mortality can be high because the clinical presentation is subtle and early recognition and prompt treatment is mandatory for survival. Post-traumatic infections develop after direct inoculation of the fungus and environmental bacteria into the wounds. We present a case of invasive mucormycosis in a previously healthy patient treated in Emergency County Hospital Targu Mures after polytrauma. **Material and methods:** We present a 30-year-old male patient involved in a motorcycle accident, with severe injury, multiple fractures in the lower extremities and necrotizing fasceiitis in a previously healthy patient. **Results:** At admission the patient was hemodynamically unstable, in hemorrhagic shock, needing a prompt multidisciplinary approach, requiring multiple surgical debridements, fasciectomy, vascular and nerve reconstruction, fractures immobilization, multiple transfusions. As it was expected due to multiple contaminated by soil, severe and profound wounds infection become evident. Cultures from tissue samples revealed *Mucor circinelloides*, *Bacillus cereus* and *Stenotrophomonas Malthophilia*. In the presence of death triad (coagulopathy, acidosis, hypothermia) angioinvasive infection progressed to fulminant necrotizing fasceiitis leading to the inevitable need to amputate the lower extremities. After amputation, multiple debridement and targeted antifungal and antimicrobial therapy patient's outcome improved significantly and negative cultures were obtained. **Conclusions:** Mucormycosis is a rare infection increasingly documented in trauma patients. Early recognition and understanding risk factors for post-traumatic mucormycosis is mandatory for successful management that implies aggressive surgical debridement and prompt antifungal treatment.

Keywords: mucormycosis, polytrauma, necrotising fasceiitis, triad of trauma, posaconazole

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ANTIMICROBIAL RESISTANCE – THE ROLE OF MOLECULAR DIAGNOSTICS IN SEVERE AND MDR INFECTIONS

Irina Magdalena Dumitru[1]

[1] Department of Infectious Diseases, Ovidius University of Constanța

Background: Antimicrobial resistance (AMR) represents one of the most critical global public health threats, currently responsible for 1.27 million attributable deaths annually, with projections reaching 10 million deaths per year by 2050. The ESKAPE priority pathogens — including MRSA, KPC-producing *Klebsiella pneumoniae*, NDM-producing *Enterobacteriaceae*, and carbapenem-resistant *Acinetobacter baumannii* — demand not only robust infection control measures but also rapid and precise microbiological diagnosis. **Material and methods:** In severe sepsis, every hour of delay in initiating appropriate therapy increases mortality by 7%. Conventional diagnostics (blood culture and antibiogram) require 48–72 hours — a timeframe incompatible with the critical therapeutic window of 6 hours recommended by the Surviving Sepsis Campaign. **Results:** Molecular diagnostics — through multiplex PCR and syndromic panels (FilmArray/BioFire BCID2, MEP, RP, GI) — enable simultaneous identification of bacteria, viruses, fungi, and resistance genes within 1–5 hours, maintaining sensitivity above 90% even in patients already receiving antibiotics. Genotypic differentiation of resistance mechanisms is clinically decisive: ceftazidime-avibactam is active

against KPC but completely inactive against NDM, where aztreonam-avibactam becomes the treatment of choice. This distinction — impossible to determine clinically or through conventional susceptibility testing — may be the difference between survival and death, given reported mortality exceeding 60% without adequate therapy. **Conclusions:** Meta-analyses confirm that syndromic panels reduce 30-day mortality by 26%, shorten hospital stay by 12%, and increase early antibiotic de-escalation rates by 67%. Rational implementation requires clear indication criteria, a 60-minute laboratory notification protocol, and periodic auditing to ensure cost-effectiveness and optimal clinical impact.

Keywords: Antimicrobial resistance, Multiplex PCR, FilmArray, Carbapenemases, Antimicrobial stewardship

SEVERE VIRAL INFECTIONS: FROM EMERGING PATHOGENS TO CRITICAL ILLNESS

HANTAVIRUS INFECTION – FROM CLINICAL SUSPICION TO MODERN DIAGNOSIS

Maria-Elena Cocuz[1], Iuliu-Gabriel Cocuz[2]

[1] Department of Fundamental, Prophylactic and Clinical Disciplines, Transylvania University of Brașov
[2] Department of Pathophysiology, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: *Hantavirus* infection, an anthropozoonosis with infected rodents as the main source of infection, transmitted mainly by airborne route through contaminated aerosols, can lead to severe forms of the disease, with significant mortality. Thus, it constitutes an important public health problem, even if the incidence of the disease is rare. **Material and methods:** The diagnosis of *Hantavirus* infection is based on the need to identify suggestive epidemiological data and corroborate them with a high level of clinical suspicion and modern laboratory methods. **Results:** Guidance for the diagnosis of *Hantavirus* infection is difficult, especially in the early stages of the disease. A major challenge is the incomplete or absent epidemiological history. The Andes viral type, spread mainly in South America, is the only one with human-to-human transmission. In Romania, 15 cases were recorded between 2023-2026. The clinical onset of the disease is usually nonspecific, flu-like or with digestive manifestations. The evolution can be severe, depending on the viral type involved, with acute renal failure, severe pulmonary damage, significant hemorrhagic manifestations, requiring numerous differential diagnoses and sometimes the patient is initially directed to other medical services. Routine laboratory tests are usually unremarkable, the only change that can guide the diagnosis being frequent thrombocytopenia. Serological tests, the basic investigation, can be false negative if performed at the very onset of the disease, before the appearance of a detectable immune response. Modern molecular diagnostic methods (RT-PCR) are useful for early diagnosis and identification of the viral species, but the results are frequently negative in the late stages of the disease. **Conclusions:** Early diagnosis of *Hantavirus* infection requires orientation towards this diagnosis and integration of epidemiological, clinical, and laboratory data. Knowledge of the main diagnostic challenges and the correct interpretation of modern diagnostic methods contribute to improving the management of severe forms of the disease.

Keywords: *Hantavirus*, hemorrhagic fever, thrombocytopenia, molecular diagnosis

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PREDICTORS OF MORTALITY IN SEVERE COVID-19: THE IMPACT OF ESKAPE RESPIRATORY SUPERINFECTIONS

Lidia Plăcintă[1], Adrian Belîi[2], Tiberiu Holban[3]

[1] Department of Infectious Diseases, Universitatea de stat de medicină și farmacie „Nicolae Testemițanu”
[2] Department of Anesthesiology and Intensive Care Medicine I, other
[3] Department of Infectious Diseases, other

Background: Severe COVID-19 is associated with increased mortality through systemic inflammation, endothelial dysfunction, and coagulation abnormalities, while multidrug-resistant ESKAPE respiratory superinfections may worsen outcomes and complicate intensive care. **Material and methods:** A retrospective study included 1,711 ICU patients with severe COVID-19 hospitalized between March 2020 and December 2021 at the Institute of Emergency Medicine (Chisinau, Republic of Moldova). Bacterial superinfection was identified in 447 cases (26.1%); 170 patients formed the ESKAPE-positive group and 1,264 – the ESKAPE-negative group. Comorbidities, invasive procedures, and laboratory parameters were analyzed and mortality predictors were expressed in terms of Odds ratios. **Results:** Mortality risk in patients with severe COVID-19 was strongly associated with mechanical lung ventilation in both study groups (ESKAPE[+]: OR = 309.21; 95% CI: 39.32–2431.42; p = 0.0001; ESKAPE[−]: OR = 1036.08; 95% CI: 495.46–2166.58; p = 0.0001). Chronic kidney disease also demonstrated a strong association with fatal outcome (ESKAPE[+]: OR = 38.05; p = 0.0004; ESKAPE[−]: OR = 15.51; p = 0.0001). In the ESKAPE-positive cohort, diabetes mellitus and chronic heart failure remained additional determinants of mortality. In the ESKAPE-negative group, mortality was associated with elevated urea (OR = 4.40; 95% CI: 3.44–5.63; p = 0.0001), increased creatinine (OR = 2.89; 95% CI: 2.25–3.67; p = 0.0001), leukocytosis, hyperglycemia, and coagulation abnormalities. Among inflammatory biomarkers, CRP showed consistent prognostic relevance, whereas procalcitonin demonstrated lower discriminatory value. ESKAPE pathogen infection was significantly associated with invasive respiratory procedures, particularly mechanical lung ventilation (OR = 5.19; 95% CI: 3.57–7.56; p = 0.0001) and percutaneous tracheostomy (OR = 4.74; 95% CI: 2.99–7.50; p = 0.0001). Among comorbidities, the strongest associations were observed for active cancer (OR = 19.35; 95% CI: 3.72–100.57; p = 0.0004), renal replacement therapy (OR = 11.48; 95% CI: 1.90–69.26; p = 0.0077), chronic heart failure (OR = 4.02; 95% CI: 2.24–7.16; p = 0.0001), and chronic kidney disease (OR = 2.46; 95% CI: 1.72–3.51; p = 0.0001).
Conclusions: Respiratory superinfection with ESKAPE pathogens in severe COVID-19 was associated with a

distinct prognostic profile. In ESKAPE-positive patients, outcome was influenced by severe comorbidities and invasive respiratory support, whereas in ESKAPE-negative patients, laboratory and inflammatory biomarkers demonstrated greater prognostic relevance.

Keywords: severe COVID-19, ESKAPE pathogens, bacterial superinfection, mortality predictors, comorbidities

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VIRAL SEPSIS AFTER COMPLEX CARDIAC SURGERY: PROLONGED CARDIOPULMONARY BYPASS, TRANSIENT IMMUNE DYSFUNCTION AND SECONDARY BACTERIAL INFECTION

Cristiana Ana-Maria Penea[1], Catalin Cacoveanu[2], Violeta Melinte[1], Cristina Maria Vacaroiu[1], Tiberiu Holban[3], Simona Claudia Cambrea[4], Adelina Maria Radu[1], Valeriu Gheorghita[1]

[1] Department of Infectious Diseases, Carol Davila University of Medicine and Pharmacy, Bucharest

[2] Department of Anesthesiology and Intensive Care Medicine I, Carol Davila University of Medicine and Pharmacy, Bucharest

[3] Department of Microbiology, Carol Davila University of Medicine and Pharmacy, Bucharest

[4] Department of Infectious Diseases, Ovidius University of Constanța

Background: Postoperative deterioration after complex cardiac surgery is often attributed to sterile inflammation, haemodynamic instability or bacterial sepsis. However, viral infections may also trigger dysregulated host responses, acute respiratory failure and multi-organ dysfunction consistent with viral sepsis. This is particularly relevant after complex procedures such as aortic dissection repair or redo cardiac surgery requiring extended cardiopulmonary bypass. Prolonged extracorporeal circulation may amplify systemic inflammation, endothelial activation, complement activation and transient immune dysfunction. Therefore, not every postoperative septic syndrome is bacterial; after prolonged cardiopulmonary bypass, viral sepsis may represent a hidden driver of organ dysfunction. **Material and methods:** A narrative review of literature and sepsis recommendations was performed. The review focused on post-cardiopulmonary bypass immune dysregulation, viral sepsis, bacterial superinfection, splanchnic hypoperfusion, bacterial translocation, biomarkers, rapid microbiological diagnosis and antimicrobial stewardship in the intensive care unit. **Results:** Patients undergoing prolonged cardiopulmonary bypass may develop a biphasic immune response, characterised by early systemic inflammation followed by transient immunoparesis. This vulnerable window may impair antiviral defence and increase susceptibility to secondary bacterial infection. The risk may be amplified by inadequate pump flow, low cardiac output or pre-existing vascular disease affecting splanchnic perfusion. Transient splanchnic ischaemia may compromise mucosal barrier integrity, favouring bacterial translocation and mixed viral-bacterial sepsis. Postoperative fever, respiratory deterioration, haemodynamic instability, acute kidney injury and elevated inflammatory biomarkers may reflect sterile postoperative inflammation, viral sepsis, bacterial sepsis or overlapping mechanisms. NEWS2 may support early recognition of deterioration, but cannot determine aetiology. Clinical assessment, lactate, biomarker trends, blood cultures, respiratory cultures and multiplex respiratory PCR may improve diagnostic precision. **Conclusions:** Viral sepsis after complex cardiac surgery is an under-recognised postoperative phenotype. Prolonged cardiopulmonary bypass may create transient immune dysfunction, while splanchnic hypoperfusion may promote bacterial translocation and secondary infection. Recognising this interaction may support earlier diagnosis, antimicrobial de-escalation and a more integrated approach to postoperative critical care.

Keywords: viral sepsis, antimicrobial stewardship, complex cardiac surgery, bacterial superinfection, cardiopulmonary bypass

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DETERMINANTS OF SEVERE INFLUENZA REQUIRING INTENSIVE CARE: A COMPARATIVE ANALYSIS OF INTENSIVE CARE AND NON-INTENSIVE CARE PATIENTS

Tudor Fleșeriu[1], Iulia Diana Sabău[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Seasonal influenza remains a major cause of hospitalization and critical illness, particularly among patients with significant comorbidity burden and acute organ dysfunction. Early identification of patients at risk of requiring intensive care may facilitate timely escalation of care and improve outcomes. This study aimed to identify clinical and laboratory determinants associated with intensive care unit (ICU) admission among hospitalized patients with severe influenza at a county hospital. **Material and methods:** We conducted a retrospective observational study including patients hospitalized between 2024 and 2026 with severe influenza, defined as

laboratory-confirmed influenza infection associated with respiratory distress. Patients were stratified according to ICU requirement into ICU and non-ICU groups. Demographic characteristics, comorbidities, clinical parameters, laboratory findings, radiological abnormalities, and bacterial superinfection rates were compared between groups. Continuous variables were analyzed using the Mann–Whitney U test, while categorical variables were assessed using Chi-square or Fisher's exact tests. Receiver operating characteristic (ROC) analysis evaluated the discriminative performance of significant variables. Independent predictors of ICU requirement were identified using multivariable logistic regression. **Results:** 200 patients met the inclusion criteria. Compared with non-ICU patients(n=149), those requiring intensive care(n=51) exhibited significantly higher Charlson Comorbidity Index scores (p=0.005), a greater prevalence of chronic kidney disease (p=0.010), lower mean arterial pressure (p=0.002), lower oxygen saturation on room air (p=0.040), higher C-reactive protein concentrations (p=0.003), higher serum creatinine levels (p=0.011), higher serum urea levels (p<0.001), increased rates of bacterial superinfection (p=0.001), more frequent radiological abnormalities (p=0.017). ROC analysis identified serum urea as the strongest discriminator of ICU requirement (AUC=0.764, 95% CI: 0.683–0.845, p<0.001), outperforming creatinine (AUC=0.603), C-reactive protein (AUC=0.655), Charlson Comorbidity Index (AUC=0.629), and bacterial superinfection (AUC=0.615). The multivariate logistic regression analysis has proven that admission serum urea remained the sole independent predictor of ICU admission (OR=1.032, 95% CI: 1.016–1.048, p<0.001). **Conclusions:** Although critically ill influenza patients demonstrated a greater burden of comorbidities, enhanced inflammatory response, and more frequent markers of organ dysfunction, admission serum urea emerged as the only independent predictor of ICU requirement. As an inexpensive and universally available biomarker, serum urea may represent a practical tool for early risk stratification in hospitalized patients with severe influenza.

Keywords: *Influenza*, ICU, Urea, Prediction, Critical infection

DIFFICULT CASES IN THE CRITICALLY ILL INFECTIOUS PATIENT

HOW SEVERE CAN LISTERIOSIS BE?

Victoria Bîrluțiu[1], Rares-Mircea Bîrluțiu[2]

[1] Department of Internal Medicine II, Lucian Blaga University of Sibiu
[2] other, Carol Davila University of Medicine and Pharmacy, Bucharest

Background: Listeriosis is a severe foodborne infection caused by *Listeria monocytogenes*, with potentially life-threatening invasive clinical forms, mainly in elderly or immunocompromised patients. In 2024, listeriosis was reported as a major foodborne infection in Europe, with approximately one in twelve cases associated with an unfavourable outcome. Fermented sausages, pork and poultry meat, and fresh products are frequently implicated, in some Romanian regions the consumption of unpasteurized milk and dairy products remains an important route of infection. **Material and methods:** We performed a retrospective study of patients diagnosed with listeriosis in our department between January 2020 and May 2026. Eleven patients with listerial sepsis and/or listerial meningitis were identified and analysed, including demographic characteristics, comorbidities, clinical presentation, cerebrospinal fluid findings, antimicrobial susceptibility, treatment, and outcome. **Results:** Most patients were male (8/11) and lived in urban areas (9/11). Age ranged from 30 to 83 years, with a median of 68 years. Important causes of immunosuppression included oncological disease in two patients, multiple myeloma in one patient, and systemic lupus erythematosus in one patient. The clinical picture was dominated by neurological involvement. Three patients presented with motor deficit and were initially suspected of stroke. Fever, headache, confusion, altered general status, and loss of appetite were present in all cases, while vomiting occurred in 72.7% and dyspnoea in 54.5%. All patients had positive blood cultures for *L. monocytogenes*, and nine also had positive cerebrospinal fluid cultures. Cerebrospinal fluid cellularity ranged from 46 to 836 cells/mm³, with monocytic predominance in four cases and mixed cellularity in five. Protein levels ranged from 0.8 to 8.93 g/L, and glucose from 30 to 236 mg/dL. All isolated strains were susceptible to ampicillin, cotrimoxazole, and meropenem. Nine patients recovered, while two had an unfavourable outcome, both with severe immunosuppressive conditions, breast cancer and multiple myeloma. Compared with survivors, deceased patients were older and had shorter hospital stays, but statistical comparisons and logistic regression were exploratory because only two deaths occurred. **Conclusions:** Listeriosis remains an important cause of morbidity and mortality, particularly among elderly and immunocompromised patients. Early recognition, prompt microbiological diagnosis, and adequate therapy are essential to improve prognosis.

Keywords: Listeriosis, Morbidity, Prognosis

INVASIVE METHICILLIN-SUSCEPTIBLE *STAPHYLOCOCCUS AUREUS* INFECTION: A THREE-CASE SERIES

Ákos Vince Andrejkovits[1], Adrian Vlad Pop[1], Norbert Kovács[1], Erzsébet Iringó Zaharia-Kézdi[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Methicillin-susceptible *Staphylococcus aureus* (MSSA) is a leading cause of bloodstream infections worldwide and is associated with substantial morbidity and mortality. Despite advances in antimicrobial therapy and supportive care, outcomes remain poor, particularly among elderly patients and those with significant comorbidities. **Material and methods:** We present three cases illustrating the diverse clinical presentations, complications, and therapeutic challenges associated with invasive MSSA infection. **Results:** Case 1. Describes a 68-year-old patient with diabetes mellitus who presented with MSSA sepsis, initially suspected to have meningitis. Subsequent magnetic resonance imaging (MRI) revealed C5–C6 cervical spondylodiscitis with an epidural abscess, requiring neurosurgical decompression and a 10-week course of targeted antimicrobial therapy (oxacillin and trimethoprim-sulfamethoxazole). Case 2. 84-year-old bedridden geriatric patient admitted with polymicrobial septic shock secondary to a giant stage IV sacral pressure ulcer. Microbiological cultures identified a complex pathogen profile, including multidrug-resistant (MDR) *Proteus* spp., extended-spectrum β-lactamase (ESBL)-producing *Escherichia coli*, *Enterococcus* spp., and MSSA. The patient required intensive care unit (ICU) support, surgical debridement, and combination antimicrobial therapy with meropenem, amikacin, and oxacillin. Case 3. 70-year-old man with multiple comorbidities and chronic alcohol use who developed MSSA bacteremia following hospitalization for an ischemic stroke. The infection originated from a cutaneous/articular focus and was complicated by infective endocarditis, left knee septic arthritis, and septic arthritis of the interphalangeal joints. Despite prolonged antimicrobial therapy, ICU support, and surgical drainage of a lower-limb abscess, the clinical course was further complicated by catheter-related multidrug-resistant infections (*Staphylococcus epidermidis*,

carbapenemase-producing *Klebsiella pneumoniae*, and *Enterobacter cloacae*), ultimately resulting in progressive clinical deterioration and death. **Conclusions:** These cases illustrate the wide clinical spectrum of invasive MSSA infection, from localized deep-seated infections to disseminated infection with endocardial involvement and metastatic septic foci. Delayed diagnosis, extensive comorbidities, and the emergence of multidrug-resistant pathogens contributed to prolonged hospitalization, the need for multidisciplinary management, and unfavorable outcomes. Early recognition of bacteremia and prompt identification of the infectious source remain essential for improving prognosis in this high-risk patient population.

Keywords: MSSA, invasive infection, metastatic septic foci

INVASIVE *NEISSERIA MENINGITIDIS* DISEASE: CURRENT CHALLENGES

Mihaela Catalina Luca[1]

[1] Department of Infectious Diseases, Grigore T. Popa University of Medicine and Pharmacy, Iasi

Background: Invasive infection with *N. meningitidis* continues to represent a major public health threat despite advances in diagnosis and prevention. Characterized by an acute onset, rapid progression, and high risk of death, the disease primarily affects infants, adolescents, and individuals with complement deficiencies or asplenia. **Material and methods:** Clinical manifestations include meningitis, sepsis, and atypical forms with multiple sites of involvement. Mortality remains significant, and survivors may develop various long-term sequelae. **Results:** The diversity of meningococcal serogroups, with regional and temporal variations, complicates epidemiological control. In Europe, serogroups B and C are predominant, but the emergence of serogroups W and Y necessitates a reassessment of immunization strategies. Definitive diagnosis is based on classical microbiological methods and rapid molecular tests, which are particularly useful in fulminant cases. **Conclusions:** Vaccination remains the primary means of prevention, having reduced the incidence of disease caused by serogroup B in several countries. At the same time, active surveillance remains essential, as does increasing public awareness of early symptoms and the importance of vaccination.

Keywords: *N. meningitidis*, vaccination, invasive infection

REFRACTORY SEPTIC SHOCK CAUSED BY INVASIVE METHICILLIN-SUSCEPTIBLE *STAPHYLOCOCCUS AUREUS* INFECTION IN A CHILD: A CASE REPORT

Ema Burlacu[1], Andreea Stoica[2], Valeriu Teodor Oltean Hategan[3], Cristina Oana Mărginean[2]

[1] DOCTORAL SCHOOL, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[2] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[3] Department of Anesthesiology and Intensive Care Medicine I, other

Background: Background: Community-acquired invasive *Staphylococcus aureus* infection is a significant cause of pediatric morbidity and mortality and may occasionally present with rapidly progressive, life-threatening complications. **Material and methods: Objective:** This report aims to describe a fatal case of community-acquired methicillin-susceptible *Staphylococcus aureus* (MSSA) infection complicated by necrotizing pneumonia, bacteremia, extensive deep venous thrombosis, septic shock, and multiple organ dysfunction syndrome. **Results: Case Presentation:** An 11-year-old girl without pathological history was admitted to our tertiary pediatric center in critical condition: septic shock, acute respiratory failure, and right femoro-popliteal deep venous thrombosis. One week before admission, she sustained a right ankle trauma that required cast immobilization. During the following 7 days, progressive right ankle swelling, cyanosis, severe pain, abdominal pain, a 2-day history of subjective fever, and worsening dyspnea over the preceding 24 hours developed despite repeated medical evaluations and progressive deterioration of the general condition. On admission, she presented with respiratory distress, pustular skin lesions, bilateral lower limb cyanosis below the knees, more pronounced on the right side, associated with marked edema, cold extremities, diminished distal pulses, severe pain, hypoxemia, and hemodynamic instability requiring vasoactive support. Laboratory investigations revealed leukopenia, thrombocytopenia, severe inflammatory syndrome, metabolic acidosis, increased creatine kinase levels, renal dysfunction (urea/creatinine abnormalities), coagulation abnormalities, and elevated D-dimer. Doppler ultrasonography demonstrated extensive femoro-popliteal deep venous thrombosis. Thoracic CT showed bilateral extensive pulmonary consolidations, mediastinal adenopathy, and cavitary pulmonary destruction suggestive of necrotizing pneumonia. Despite aggressive management including broad-spectrum antibiotics, anticoagulation, mechanical ventilation, vasoactive support, corticosteroids, and intensive care measures, the patient developed refractory septic shock with MSSA

and multiple organ dysfunction syndrome and died 12 hours after admission. **Conclusions:** Invasive MSSA infection may present as a fulminant and fatal disease, even with correct management of the child. Early recognition of necrotizing staphylococcal pneumonia and its complications is essential in order to perform a performant management of the case. **Acknowledgement:** This work was supported by the project FOCUS: Formare si Orientare pentru Cercetatorii UMFST în Sanatate, contract no. 100455/29.08.2025, project code SMIS 350717, co-funded by PS/688/PS_P3/OP4/ESO4.7/PS_P3_ESO4.7_A6.

Keywords: *Staphylococcus aureus*; methicillin-susceptible *Staphylococcus aureus*;, necrotizing pneumonia; septic shock; deep venous thrombosis.

CONTRASTING CLINICAL PRESENTATIONS OF INVASIVE MENINGOCOCCAL DISEASE IN INFANCY: FROM DIAGNOSTIC PITFALLS TO FULMINANT SEPTIC SHOCK

Roxana-Cristina Mares[1], Mădălina Delia Coman[1], Maria Oana Săsăran[1], Cristina Oana Mărginean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Invasive meningococcal disease remains one of the most severe bacterial infections in children, with clinical manifestations ranging from isolated meningitis to fulminant septic shock. In infants, the diagnosis may be particularly challenging because presentations vary from subtle nonspecific symptoms to rapidly progressive life-threatening illness. **Material and methods:** We report two infants with confirmed invasive meningococcal infection who exhibited strikingly different clinical courses. The first case involved a 9-month-old boy presenting with fever, vomiting, somnolence, and marked leukocyturia, initially treated as a urinary tract infection. Ongoing clinical deterioration and increasing inflammatory markers prompted lumbar puncture, which demonstrated bacterial meningitis, while multiplex PCR confirmed *Neisseria meningitidis*. The second case involved an 8-month-old infant presenting with fever, respiratory symptoms, generalized petechial rash, altered mental status, and hemodynamic instability. Microbiological investigations confirmed invasive meningococcal infection, while laboratory findings revealed severe lactic acidosis, thrombocytopenia, coagulation abnormalities, and multiple organ dysfunction, consistent with meningococcemia and septic shock. **Results:** The first patient required escalation of antibiotic therapy to intravenous Ceftriaxone and admission to the Pediatric Intensive Care Unit because of neurological deterioration. Clinical recovery was progressive, and the patient was discharged without neurological sequelae. In contrast, the second infant presented with a fulminant form of invasive meningococcal disease characterized by septic shock, coagulopathy, generalized petechiae, and multiorgan dysfunction. Intensive treatment, including inotropic support, broad-spectrum antibiotics, immunoglobulin therapy, and advanced critical care measures, resulted in gradual recovery, complete healing of skin lesions, and absence of long-term sequelae. **Conclusions:** These cases highlight the remarkable clinical heterogeneity of invasive meningococcal disease in infancy. Although both patients had confirmed meningococcal infection, one presented with an atypical form of meningitis leading to initial diagnostic uncertainty, whereas the other developed fulminant meningococcemia with septic shock and multiorgan failure. Early recognition, rapid initiation of targeted antimicrobial therapy, and timely intensive care support remain essential determinants

Keywords: invasive meningococcal disease, *Neisseria meningitidis*, meningococcemia, septic shock, meningococcal meningitis

PROSTHETIC AORTIC VALVE ENDOCARDITIS CAUSED BY *LISTERIA MONOCYTOGENES* DELAYED DIAGNOSIS AFTER RECURRENT SYSTEMIC EMBOLIZATION AND EXTENSIVE PERIVALVULAR DESTRUCTION

Anca Meda Văsieșiu[1], Tudor Flețeriu[1], Adrian Vlad Pop[1], Lucia Carmen Chiriac[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Aim: We report a case of prosthetic aortic valve endocarditis due to *Listeria monocytogenes* in which diagnosis was significantly delayed despite recurrent embolic events and progressive perivalvular involvement. **Material and methods:** The patient had undergone bioprosthetic aortic valve replacement in 2015 and had a background of insulin-treated type 2 diabetes mellitus together with significant cardiovascular comorbidity. The clinical course began with an acute lower limb arterial occlusion that was treated with percutaneous balloon angioplasty. Over the following months, the patient experienced three episodes of

vertebrobasilar ischemic stroke despite therapeutic anticoagulation started after the first embolic event. Repeated transthoracic and transesophageal echocardiograms performed during the neurological events showed no clear vegetations or prosthetic valve dysfunction. The prosthesis appeared normofunctional, with only mild dilatation of the right sinus of Valsalva. This finding was initially interpreted as a possible previously drained aortic root abscess. Further imaging with CT angiography and PET-CT was recommended but not carried out at that time. In the subsequent weeks the patient developed progressive constitutional symptoms — low-grade fever, asthenia, and weight loss — which were first attributed to a non-specific infection and treated empirically. Because the symptoms persisted, blood cultures were eventually obtained. All three sets grew *Listeria monocytogenes* within 36 hours. **Results:** Subsequent investigations confirmed prosthetic aortic valve endocarditis with a spontaneously drained perivalvular abscess, significant trans- and paravalvular regurgitation, aortic root pseudoaneurysm formation, and progressive heart failure. The disease was marked by repeated systemic embolization and clinical deterioration, ultimately requiring complex cardiac surgery with complete debridement of infected tissue and aortic root reconstruction. **Conclusions:** This case illustrates the aggressive nature of *Listeria monocytogenes* prosthetic valve endocarditis and the diagnostic pitfalls of echocardiography when advanced perivalvular destruction is present. Spontaneous drainage of an aortic root abscess can mask classic imaging features and contribute to delayed diagnosis. In patients with prosthetic valves who present with recurrent systemic emboli, a high index of suspicion for infective endocarditis should be maintained even when echocardiography is non-diagnostic. Early use of multimodal imaging, particularly CT angiography and PET-CT, is strongly recommended. The patient ultimately survived after undergoing major surgical intervention for this complicated prosthetic valve endocarditis.

Keywords: *Listeria monocytogenes*, Prosthetic valve endocarditis, Embolization, Perivalvular abscess, Multimodal imaging.

SEVERE INFECTIONS IN SPECIAL POPULATIONS: THE CRITICALLY ILL AND IMMUNOCOMPROMISED PATIENT

A PERFECT STORM IN EARLY INFANCY: STEC-ASSOCIATED HEMOLYTIC UREMIC SYNDROME AND SEPTIC SYNDROME IN A PATIENT WITH COMPLEX CONGENITAL MALFORMATIONS

Mihai-Daniel Mocanu[1], Ana-Maria-Roxana Koller[1], Carmen Muntean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Shiga toxin–associated hemolytic uremic syndrome (STEC-HUS) is a severe thrombotic microangiopathy that may lead to acute kidney injury, neurological complications and hemodynamic instability, particularly in critically ill pediatric patients with significant comorbidities. **Material and methods:** We present a 4-month-old infant admitted for severe dehydration, vomiting, feeding refusal and altered general status. The patient was known with complex congenital pathology and suspected VACTERL association. **Results:** Laboratory investigations revealed acute kidney injury, severe hypernatremic dehydration, metabolic acidosis, elevated lactate and LDH levels, progressive anemia and thrombocytopenia. Stool multiplex PCR detected Shiga toxin type1, supporting the diagnosis of STEC-HUS. Sepis was suspected based on elevated presepsin levels and clinical deterioration. During hospitalisation, the patient developed generalised seizures responsive to diazepam. Management required multidisciplinary intensive care with cautious hydroelectrolytic correction, oxygen therapy, broad-spectrum antibiotics, anticonvulsants, transfusion support and continuous hemodynamic monitoring with favourable evolution. **Conclusions:** This case highlights the diagnostic and therapeutic challenges in managing critically ill infants with overlapping STEC-HUS and complex congenital anomalies. Early recognition and multidisciplinary intervention are essential for a favourable outcome.Acknowledgement: This work was supported by the project FOCUS: Formare si Orientare pentru Cercetatorii UMFST în Sanatate, contract no. 100455/29.08.2025, project code SMIS 350717, co-funded by PS/688/PS_P3/OP4/ESO4.7/PS_P3_ESO4.7_A6.

Keywords: STEC-HUS, hemolytic uremic syndrome, infant, sepsis, VACTERL association

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MANAGEMENT OF *PSEUDOMONAS AERUGINOSA* INFECTION IN A PEDIATRIC PATIENT WITH CYSTIC FIBROSIS

Crina-Larisa Muntean[1], Ioana-Roxana Morar[1], Cristina Oana Mărginean [1], Brîndusa Capîlna[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Cystic fibrosis is a complex genetic disease characterized by multisystem involvement. It is associated with pulmonary manifestations of a suppurative nature, leading to progressive respiratory disease with bronchiectasis, respiratory failure, and recurrent chronic infections with *Staphylococcus aureus*, *Haemophilus influenzae*, and non-glucose-fermenting Gram-negative bacilli such as *Pseudomonas aeruginosa*. **Material and methods:** A 10-year-old male patient with a medical history of allergic bronchial asthma and right-sided pneumonia presented with a one-month history of productive cough prior to admission. A chest X-ray revealed diffuse bilateral accentuation of the peribronchovascular markings, in the perihilar and basal regions, and in the right apical area. A native chest CT scan showed multiple bilateral tubular bronchiectases, raising suspicion of cystic fibrosis. Laboratory investigations revealed leukocytosis (18.700/mm3) with neutrophilia (86,52%)and elevated IgG level (3653 mg/dL). Sputum culture identifies the presence of *Pseudomonas aeruginosa* and MRSA, both susceptible to ceftazidime and amikacin. Additional investigations required for the diagnosis of cystis fibrosis were carried out, including the sweat chloride test (122mmol/L), the fecal pancreatic elastase mesurement (<20µg/g), abdominal ultrasound, ophthalmologic examination with fundus evaluation, and genetic assessment, which include genotyping (the result is pending). **Results:** After initiating high-dose dual antibiotic therapy with ceftazidime and amikacin, the patient showed a favorable clinical and biological evolution. N-acetylcysteine was administered as an adjunct therapy for its antioxidant properties. Subsequntely, the patient was switched to inhaled tobramycin therapy. Chronic treatment of cystic fibrosis was initiated, including pancreatic enzyme replacement therapy and inhaled dornase alfa. **Conclusions:** *Pseudomonas aeruginosa* infection represents a severe complication in patients with cystic fibrosis and may have serious consequences. However, when identified early and treated appropriately, it can lead to a favorable outcome, resulting in improved clinical and paraclinical parameters.

Keywords: Infection, *Pseudomonas aeruginosa*, Cystic fibrosis, Dual antibiotic therapy

THERAPEUTIC LIMITS IN SEVERE IMMUNOSUPPRESSION - REFRACTORY PULMONARY ASPERGILLOSIS IN A PEDIATRIC PATIENT WITH ALL: CASE REPORT

Zsuzsanna Erzsebet Papp[1], Reka Solyom[1], Zsuzsanna Moreh[1], Sanda Lucia Voicu[1], Lorena Elena Melit[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Pediatric malignancies represent 2% of total childhood diseases, with a specific pathological incidence where ALL represents 30% of all cancer types. High-risk, Philadelphia chromosome-positive pre-B acute lymphoblastic leukemia affects only 2% to 5% of pediatric ALL patients, and CNS involvement at onset also represents a narrow percentage of all pediatric ALL cases. The required treatment protocol is highly aggressive with severe aplastic periods, leaving the patient extremely vulnerable to opportunistic infections. infections. **Material and methods:** We report the case of a 13-year-old male patient diagnosed with high-risk Ph^+ pre-B ALL. The patient was managed under the ALL BFM 2009 protocol alongside continuous Imatinib therapy. During profound aplasia following his sixth high-risk chemotherapy block the patient developed a severe febrile illness. Despite a normal initial chest X-ray and broad-spectrum antibiotic and fluconazole coverage, his respiratory status rapidly deteriorated. **Results:** A chest CT scan revealed confluent pulmonary lesions highly suggestive of invasive aspergillosis. Fungal sputum cultures subsequently confirmed co-infection with *Aspergillus*, *Candida albicans*, and non-albicans *Candida* species. Despite prompt escalation to dual intravenous antifungal therapy with Voriconazole and Caspofungin, the infection progressed aggressively. The patient developed acute respiratory failure, skin lesions, and neurological obtundation, ultimately suffering a fatal cardiopulmonary arrest **Conclusions:** This case demonstrates the therapeutic boundaries in severely immunosuppressed pediatric oncology patients. Aggressive, multi-agent protocols create critical vulnerability where invasive fungal infections can progress with devastating speed. The discrepancy between initial conventional radiology and clinical reality highlights the absolute need for early chest CT screening, aggressive prophylaxis, and advanced therapeutic options to combat refractory fungal co-infections in high-risk pediatric leukemia.

Keywords: Leukemia, Philadelphia chromosome, fungal, prophylaxis, immunesupression

RISK OF SEPSIS WITH OPPORTUNISTIC GERMS IN CHILDREN WITH MALNUTRITION

Lorena Elena Melit[1], Noemi Ballo[1], Zsuzsanna Erzsebet Papp[1], Monica Sanda Cucuiet[1], Sanda Lucia Voicu[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Severe acute malnutrition (SAM) remains an important cause of death among children below the age of 5 years living in low- and middle-income countries. SAM is in fact a complex syndrome affecting multiple organs and systems: gut, liver, skin, brain, and the immune, metabolic, and hormonal systems. **Material and methods:** We report the case of a 11-month-old female infant, who presented with weight loss (approximately 2 kg within the last 2 months) and complete solid food refusal in order to highlight the systemic impact of malnutrition. **Results:** The anamnesis revealed a normal neuro-psychomotor development until the age of 8 month and a weight of 8 kg. After this age, she began to refuse completely solid food, accepting only breast milk. The clinical exam performed at the time of admission revealed influenced general status, inconsolable crying, pallor, dry skin, severe muscle wasting and generalized hypotonia. The laboratory tests indicated only mild hyponatremia. We initiated intravenous rehydration and we tried to reinitiate solid feeding, but the refusal persisted. Thus, we inserted a nasogastric feeding tube and we started to administer 10 ml of formula every 2 hours, and increased the quantity each day with 10 ml. We also performed an endocrinology consult which ruled out an endocrine cause based on clinical exam and laboratory tests. The abdominal and transfontanelar ultrasound exams were within normal limits. The neurology consult established the diagnosis of neuro-psychomotor regression most-likely due to malnutrition. The echocardiography pointed out only a mild persistent foramen ovale. The initial evolution was favorable, gaining 500 grams within the first week of admission. On the 10^{th} day of admission, she developed fever and tachycardia with no obvious clinical signs of infection. The repeated laboratory tests indicated leukopenia, anemia, thrombocytopenia, severely increased C-reactive protein, and the blood culture was positive for *Klebsiella oxytoca*. We initiated antibiotic for 10 days (ceftriaxone) and symptomatic treatment with favorable evolution (negative control blood culture), accepting small amounts of solid food and a weight gain of approximately 1 kg after 3 weeks. **Conclusions:** Feeding disorders in infants represent a major cause of acute malnutrition regardless of the socio-economic level

Keywords: malnutrition, sepsis, opportunistic germs, feeding disorders, infant

TRICHOSPORON ASAHII-DISSEMINATED INFECTION IN A CHILD WITH ACUTE LYMPHOBLASTIC LEUKEMIA- A FUNGAL COMPLICATION RELATED TO CHEMOTHERAPY INDUCED IMMUNOSUPPRESSION

Andreea Ligia Dincă[1], Evelyn Janette Bran[1], Mihaela Ioana Chinceșan[1], Cristina Oana Mărginean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Invasive fungal infections remain a major cause of morbidity and mortality in immunocompromised pediatric patients, particularly those with hematologic malignancies. *Trichosporon asahii* is an emerging opportunistic pathogen capable of causing severe invasive disease with high mortality rates in this vulnerable population.**Objective:** To highlight the diagnostic and therapeutic challenges associated with *Trichosporon asahii* infection in a child with acute lymphoblastic leukemia and severe chemotherapy-induced immunosuppression. **Material and methods:** We report the case of a 4-year-old female with pre-B ALL (L2 subtype) and CNS involvement, treated according to the ALL IC-BFM 2009 protocol, with chemotherapy-induced immunosuppression. Clinical and laboratory data were collected, including blood cultures, microbiological swabs from periungual lesions, and tongue scrapings. Imaging studies, including abdominal ultrasound and CT scan, were performed to evaluate suspected systemic dissemination. **Results:** Chemotherapy induced severe oral mucositis, aphthous stomatitis and prolonged agranulocytosis; since the patient had no caregiver, a persistent thumb-sucking habit developed, leading to periungual paronychia; although blood cultures were negative, the lesion swabs and the tongue scraping revealed *Trichosporon asahii* colonization, sensitive to Voriconazole. A 21-day antifungal course was administered, with subsequent negative cultures. Two days post-treatment, the patient developed fever and upper digestive hemorrhage manifested through melena. Imaging identified multiple spleen and kidney - small, round, hypoechoic lesions, highly suggestive of fungal dissemination. Voriconazole and antibiotics were reintroduced, resulting in modest clinical improvement, but a fatal outcome weeks later. **Conclusions:** Leukemia-related immunosuppression, chemotherapy toxicity, and associated complications such as mucositis predispose pediatric oncology patients to severe fungal infections. Although blood cultures are not always positive, early identification and targeted antifungal therapy are crucial for improved outcomes in this vulnerable population.

Keywords: *Trichosporon asahii*, Pediatric oncology, spleen disemination, fungal infection, acute lymphoblastic leukemia

SEVERE SEPSIS IN A CHILD WITH GENETIC BACKGROUND

Andreea Bianca Stoica[1], Ana-Maria-Roxana Koller[1], Carmen Muntean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Severe sepsis in children is a time-critical condition, defined by a dysregulated host response to infection leading to life-threatening organ dysfunction. In pediatric patients with genetic background and urinary tract anomalies, recurrent infections, and a higher likelihood of multidrug-resistant pathogens may substantially increase the risk of rapid clinical deterioration and complicated sepsis courses. **Material and methods:** We report the case of a 4-year-4-month-old boy known with genetic background, recurrent UTIs, congenital kidney abnormalities, admitted with persistent high-grade fever, vomiting, diarrhea, lethargy, and oliguria. Clinical presentation, laboratory and microbiological findings, imaging features, therapeutic management, and short-term outcome are presented. **Results:** On admission, the child presented with impaired general condition, signs of dehydration, and criteria consistent with severe sepsis of urinary origin. Laboratory evaluation demonstrated a marked systemic inflammatory response, leukocytosis with neutrophilia, increased CRP, also increased procalcitonin, anemia, hypoalbuminemia, hyponatremia, and additional biochemical abnormalities indicating significant systemic involvement. Blood cultures isolated extended-spectrum beta-lactamase–producing *Klebsiella pneumoniae*, susceptible only to Carbapenems and Amikacin, confirming severe gram-negative sepsis due to a multidrug-resistant urinary pathogen. Ultrasonography and CT revealed multiple right renal cortico-medullary abscesses, kidney stones, and right ureterohydronephrosis, consistent with obstructive uropathy. Empirical antimicrobial therapy was rapidly escalated to targeted intravenous Meropenem and Amikacin, combined with fluid and electrolyte resuscitation, albumin, diuretics, immunoglobulin, and comprehensive supportive care. Given the obstructive component and ongoing severe sepsis, cystoscopy with placement of a right double-J

ureteral stent was performed, achieving effective decompression and source control. Subsequently, the patient exhibited progressive clinical stabilization, defervescence, a steady decline and normalization of inflammatory markers, imaging-documented regression of renal abscesses, with an improvement of the renal function, allowing discharge in improved general status. **Conclusions:** This case illustrates the potential for fulminant evolution of pediatric sepsis in a child with genetic syndrome and complex urinary tract malformation. It underscores the central role of early recognition, prompt microbiologically guided escalation of antimicrobial therapy, and timely urological source control in mitigating systemic and renal sequelae and optimizing outcomes in high-risk pediatric patients.Acknowledgement: This work was supported by the project FOCUS: Formare si Orientare pentru Cercetatorii UMFST în Sanatate, contract no. 100455/29.08.2025, project code SMIS 350717, co-funded by PS/688/PS_P3/OP4/ESO4.7/PS_P3_ESO4.7_A6.

Keywords: sepsis, abcesses, abscesses, child, UTIs

SEVERE RESPIRATORY SEPSIS COMPLICATED BY ACUTE KIDNEY INJURY AND HYPERNATREMIC DEHYDRATION IN AN ADOLESCENT WITH COMPLEX NEUROLOGICAL DISABILITY: A THERAPEUTIC CHALLENGE

Cristina Oana Mărginean[1], Roxana-Cristina Mares[1], Maria Oana Săsăran[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Sepsis remains a major cause of morbidity and mortality in pediatric patients, particularly in those with severe neurological impairment and multiple comorbidities. Early recognition and aggressive supportive treatment are essential to prevent multiorgan dysfunction. **Material and methods:** We present the case of a 15-year-old male with Xq28 duplication syndrome, severe neurodevelopmental impairment, spastic tetraparesis, refractory epilepsy, and multiple cerebral abnormalities, admitted with persistent fever, vomiting, cough, respiratory distress, and severe deterioration of general condition. Laboratory evaluation revealed marked inflammatory syndrome (CRP 212.4 mg/L), leukocytosis (16.37×10³/µL), severe hypernatremia (167 mmol/L), acute kidney injury (creatinine 3.65 mg/dL, urea 235.4 mg/dL), coagulation abnormalities, and acute respiratory failure. Chest imaging demonstrated bilateral interstitial pulmonary involvement, supporting a respiratory source of infection. **Results:** The patient was diagnosed with severe sepsis of pulmonary origin, associated with multiorgan dysfunction, including acute kidney injury, respiratory failure, electrolyte disturbances, hypoalbuminemia, and coagulopathy. Extensive microbiological investigations, including blood and urine cultures, remained negative. Empirical broad-spectrum antimicrobial therapy with meropenem was initiated and subsequently escalated by adding teicoplanin due to persistent fever and elevated inflammatory markers. Fluconazole was also administered during hospitalization. Intensive intravenous rehydration, correction of electrolyte and acid–base disturbances, respiratory support, nutritional support, and multidisciplinary management were provided. Respiratory multiplex PCR later detected *Parainfluenza Virus* Type 3, interpreted as an associated viral infection in the context of severe bacterial sepsis. Progressive clinical and biological improvement was observed, with normalization of renal function, correction of hypernatremia, resolution of inflammatory syndrome, and recovery of respiratory status. The patient was discharged in stable condition after 14 days of hospitalization. **Conclusions:** This case illustrates the challenges of managing severe respiratory sepsis with multiorgan dysfunction in a child with significant neurological comorbidities. Prompt recognition, aggressive supportive care, and early initiation of broad-spectrum antimicrobial therapy were crucial for a favorable outcome, despite the severity of presentation and the presence of multiple risk factors associated with poor prognosis.

Keywords: pediatric sepsis, acute kidney injury, hypernatremia, multiorgan dysfunction, meropenem, teicoplanin

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A CASCADE OF SEPSIS EPISODES AND CRITICAL MICRONUTRIENT DEFICIENCY IN A COMPROMISED, CHRONICALLY DIALYZED HOST

Ruxandra Moroti[1], Oana Brîndușe[1], Gabriela - Andreea Dumitru[1], sever Membulat[1], Brîndușa Niculesu[1]

[1] Department of Infectious Diseases, Carol Davila University of Medicine and Pharmacy, Bucharest

Background: Invasive infections remain a major cause of morbidity in chronically dialyzed patients, who accumulate multiple vascular interventions, prosthetic materials, and repeated breaches of skin and bloodstream integrity. Along with *Staphylococcus aureus*, *Candida parapsilosis* has emerged as a predominant pathogen in

devices-dependent individuals due to its strong biofilm-forming capacity and affinity for synthetic surfaces. Superimposed metabolic deficiencies further complicate outcomes in this vulnerable population. **Material and methods:** Case Report of a 37-year-old woman on lifelong hemodialysis, with multiple vascular accesses and long-standing prosthetic grafts. **Results:** The patient presented with severe *Candida parapsilosis* sepsis, originating from one of the unfunctional remaining vascular prostheses as a nosocomial infection, with polyarticular involvement. The graft was extracted, and the brachial artery was repaired using a bovine pericardial patch. Management required prolonged antifungal systemic treatment and intraarticular instillation. Shortly after recovery, she developed influenza complicated by MSSA bacteremia, leading to a second, apparently mild, sepsis. But during this episode, the previously implanted bovine patch catastrophically ruptured—an event consistent with infection-related mechanic accident of cardiovascular graft material. While the massive hemorrhage had a clear explanation (the patch rupture), the patient had also experienced chronic, persistent bleeding both before and after this event. These episodes remained unexplained by surgical assessment or hematologic evaluation, suggesting an underlying systemic contributor. This prove to be a severe vitamin C deficiency - a condition systematically encountered in chronically dialyzed patients due to dialytic losses and inadequate supplementation. Vitamin C deficiency contributes substantially to disproportionate bleeding. **Conclusions:** This case illustrates three key aspects relevant to the care of chronically dialyzed patients. First, *C. parapsilosis* remains a major pathogen in individuals with indwelling prosthetic material, where biofilm formation complicates diagnosis and eradication, making it essential to "Think Fungus!" and to promptly remove any infected device to control fungal sepsis. Second, infected vascular grafts are structurally vulnerable during any septic episodes and may rupture explosively under inflammatory and hemodynamic stress. Third, profound vitamin C deficiency, frequently overlooked in chronic dialysis, can markedly worsen vascular fragility and bleeding, and must therefore be systematically assessed, with vitamin C routinely supplemented.

Keywords: chronic dialysis, hemorrhage, vitamin C deficiency, sepsis, vascular graft rupture

MANAGEMENT OF THE PEDIATRIC PATIENT WITH SEVERE INFECTION

BEYOND TRADITIONAL INFLAMMATORY SCORES: LEUKOCYTE GLUCOSE INDEX AS A NOVEL PREDICTOR OF CLINICAL SEVERITY IN PEDIATRIC INFECTIOUS MENINGITIS

Alexandra Ioana Asztalos[1], Adrian Vlad Pop [1], Cristina Elena Gîrbovan [1], Vicențiu Damian Băcilă[2], Cristina Oana Mărginean[3], Adina Huțanu[4], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[2] Department of Internal Medicine VI, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[3] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[4] Department of Clinical Laboratory, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Early identification of severe meningitis remains a major clinical challenge in pediatric infectious diseases. Several hematological inflammatory indices have been proposed as prognostic markers; however, their utility in pediatric meningitis remains poorly established. This study aimed to evaluate the predictive value of the leukocyte glucose index (LGI) and other systemic inflammatory indices for clinical severity in children diagnosed with meningitis. **Material and methods:** We conducted a retrospective observational study including 44 pediatric patients diagnosed with meningitis. Demographic characteristics, etiological agents, laboratory parameters, cerebrospinal fluid findings, and inflammatory indices derived from routine blood tests (NLR, PLR, MLR, SII, SIRI, AISI, dNLR, and LGI) were analyzed. Clinical severity was categorized as severe or non-severe according to predefined criteria. Differences between groups were assessed using the Mann–Whitney U test. Receiver operating characteristic (ROC) curve analysis was performed to evaluate the discriminative ability of LGI. Logistic regression models were used to determine whether LGI independently predicted severe disease. **Results:** Among the 44 patients included, 29 (65.9%) were male, 9 (20.5%) required intensive care unit admission, and 3 (6.8%) died. Nineteen patients (43.2%) developed severe disease. The most frequently identified pathogen was *Neisseria meningitidis* (25%), although no etiological agent was identified in 40.9% of cases. Severe cases had significantly higher leukocyte counts ($p=0.017$), monocyte counts ($p=0.031$), blood glucose levels ($p=0.006$), and LGI values ($p<0.001$). No significant associations were observed for NLR, PLR, MLR, SII, SIRI, AISI, or dNLR. LGI demonstrated good discriminatory performance for severe disease, with an area under the ROC curve of 0.794 (95% CI: 0.651–0.936; $p<0.001$). An LGI cutoff value of 1.25 yielded a sensitivity of 73.7% and a specificity of 80.0%. In multivariable logistic regression adjusted for age and sex, LGI remained an independent predictor of severe meningitis (OR 4.29, 95% CI 1.41–13.05; $p=0.010$). **Conclusions:** LGI appears to be a simple, inexpensive, and readily available biomarker associated with clinical severity in pediatric meningitis. Compared with other inflammatory indices, LGI demonstrated superior prognostic performance and may represent a useful adjunctive tool for early risk stratification. Larger prospective studies are needed to validate these findings.

Keywords: Pediatric Meningitis, Leukocyte Glucose Index, Clinical Severity, Systemic Inflammatory Indices, Prognostic Biomarkers

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WHEN A SORE THROAT IS NOT JUST A SORE THROAT: SEVERE PEDIATRIC COMPLICATIONS OF GROUP A STREPTOCOCCAL INFECTION

Ana-Maria-Roxana Koller[1], Mihai-Daniel Mocanu[1], Andreea Bianca Stoica[1], Carmen Muntean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Group A β-hemolytic *Streptococcus* (GAS) is a well-recognized pediatric pathogen, presenting as a sore throat, fever, or uncomplicated upper respiratory infection. However, *Streptococcus pyogenes* may conceal a broader spectrum, from self-limited disease to immune-mediated and life-threatening complications. **Material and methods: Case series:** We report two teenagers illustrating this unpredictable course. **Results:** A previously healthy 15-year-old boy developed acute post-streptococcal glomerulonephritis complicated by posterior reversible encephalopathy syndrome (PRES). He presented with headache, nausea, vomiting, visual disturbances, arterial hypertension, and seizures. Cerebral MRI findings were consistent with PRES, and renal involvement was supported by laboratory tests. He improved with antihypertensive and anticonvulsant therapy, alongside renal disease management. The second case involved a 14-year-old girl with severe abdominal pain, dehydration, metabolic acidosis, acute renal impairment, thrombocytopenia, hepatic and coagulation dysfunction, and a positive rapid GAS test. She developed septic shock with multiorgan dysfunction, presumed renal in origin, requiring intensive care, vasoactive support, renal replacement therapy, and targeted antibiotics. **Conclusions:** Group A streptococcal infection may enter quietly, disguised as a routine illness, yet its complications may speak loudly: through hypertension-related seizures, cerebral edema, renal injury, septic shock, and multiorgan dysfunction. Early recognition may transform irreversible damage into recovery. **Acknowledgement**: This work was supported

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Keywords: Group A *Streptococcus*, children, post-streptococcal glomerulonephritis, posterior reversible encephalopathy syndrome, septic shock

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ACUTE RESPIRATORY FAILURE SECONDARY TO MILIARY TUBERCULOSIS IN A 4-MONTH-OLD INFANT - CASE REPORT

Reka Solyom[1], Zsuzsanna Moreh[1], Zsuzsanna Erzsebet Papp[1], Lorena Elena Melit[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Tuberculosis (TB) in infancy is an uncommon but potentially life-threatening condition, most frequently acquired through airborne transmission from an infectious adult contact. Early recognition and prompt initiation of therapy are essential to prevent severe complications, including tuberculous meningitis and miliary tuberculosis. **Material and methods:** We report the case of a 4-month-old infant admitted to the Pediatric Clinic II with acute respiratory infection and severe acute respiratory failure. **Results:** Empirical antibiotic treatment was initiated, however, the lack of clinical improvement prompted further diagnostic investigations. Molecular testing (GeneXpert MTB/RIF) confirmed *Mycobacterium tuberculosis* infection. Consequently, anti-tuberculous therapy was commenced, leading to a gradual but favorable clinical outcome. **Conclusions:** This case highlights the diagnostic challenges of tuberculosis in young infants, in whom clinical manifestations are often nonspecific and may mimic other respiratory infections. A high index of suspicion, together with a thorough epidemiological and medical history, remains crucial for achieving an early and accurate diagnosis and improving patient outcomes.

Keywords: tuberculosis, infant, respiratory failure, infection, complications

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A CASE OF BASAL PNEUMONIA COMPLICATED BY SPLENIC INFARCTION

Zsuzsanna Moréh[1], Reka Solyom[1], Zsuzsanna Erzsebet Papp[1], Virginia Bodescu[1], Zsuzsanna Gall[2], Lorena Elena Melit[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Pediatrics IV, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Community-acquired pneumonia (CAP) in children most frequently presents with cough, fever, and dyspnea, often accompanied by nonspecific systemic manifestations such as asthenia, fatigue, anorexia, abdominal pain, and alterations in bowel habits. Beyond the commonly encountered pulmonary complications, CAP may also be associated with extrapulmonary manifestations and complications resulting either from the direct pathogenic effects of the infectious agent or from immune-mediated host responses. **Material and methods:** We report the case of a 13-year-old female patient admitted to our department with a 5-day history of left upper quadrant abdominal pain, fever, asthenia, productive cough, and chest pain. Laboratory evaluation demonstrated findings consistent with a severe bacterial infection, while chest radiography revealed left lower lobe pneumonia. Following the initiation of antibiotic therapy and supportive treatment, the patient's clinical evolution was initially favorable. However, despite eight days of treatment, persistent abdominal pain prompted further laboratory and imaging investigations, raising suspicion of a complication. Contrast-enhanced thoracoabdominal computed tomography (CT) demonstrated left lower lobe pulmonary consolidation, splenic vein thrombosis, and complete splenic infarction. **Results:** Emergency surgical intervention was undertaken, and splenectomy was performed. The postoperative course was uneventful, with favorable clinical evolution and no evidence of additional thrombotic events. **Conclusions:** In pediatric practice, pneumonia is recognized as the most common extra-abdominal cause of abdominal pain. In cases of lower lobe pneumonia, abdominal pain is typically attributed to diaphragmatic pleural irritation. However, as illustrated by the present case, persistent or atypical abdominal pain may occasionally indicate the presence of severe underlying pathology requiring prompt investigation. Splenic infarction is an exceptionally rare entity in the pediatric population, and establishing its precise etiology may be challenging. It most commonly occurs in association with hematologic malignancies, inherited or acquired thrombophilic disorders, autoimmune diseases, severe infections or sepsis, and cardiac conditions associated with an increased risk of thromboembolism.

Keywords: community-acquired pneumonia, abdominal pain, splenic infarction

DIAGNOSTIC BIOMARKERS FOR BACTERIAL-VIRAL DISCRIMINATION IN FEBRILE CHILDREN: PERFORMANCE AND IMPLICATIONS FOR SEVERE INFECTION PREVENTION

Mădălina-Delia Coman[1], Maria Oana Săsăran[2], Monica Grama[1], Ana Stan-Muntean[1], Ema Burlacu[1], Cristina Oana Mărginean[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Pediatrics III, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Fever is one of the most frequent reasons for pediatric emergency consultation. Differentiating bacterial from viral infections based on clinical presentation alone remains a significant challenge, as symptoms are often nonspecific and overlapping. Failure to identify bacterial infections may delay treatment and lead to sepsis or critical illness, whereas unnecessary antibiotics promote antimicrobial resistance. Host-response biomarkers may support rapid bacterial-viral discrimination, but their comparative diagnostic performance and readiness for clinical implementation require systematic evaluation. Through this paper, we aim to evaluate the diagnostic performance of conventional biomarkers (C-reactive protein [CRP], procalcitonin [PCT], presepsin) and host-response signatures (tumor necrosis factor-related apoptosis-inducing ligand [TRAIL], interferon gamma-induced protein 10 [IP-10]) in differentiating bacterial from viral infections in febrile children, as well as to assess their potential role in antimicrobial stewardship protocols in pediatric emergency care. **Material and methods:** A systematic search was conducted for published data between January and April 2026, comprising of the following databases: PubMed, Scopus, Web of Science, and CENTRAL. Studies evaluating the diagnostic accuracy of individual or combined biomarkers in febrile children were included. **Results:** Twenty-eight studies met the inclusion criteria. Combined host-response signatures of TRAIL, IP-10, and CRP achieved sensitivities of 90–94% and specificities of 88–94%, with AUC values at or above 0.90, outperforming individual biomarkers in direct comparisons. PCT demonstrated the highest diagnostic accuracy for invasive bacterial infection in febrile infants younger than ≤60 days, with AUC up to 0.92 and negative predictive values approaching 100%. Diagnostic performance was reduced in *Mycoplasma pneumoniae* infections, very young infants, and antibiotic-pretreated cohorts. Evidence on biomarker performance in severely or critically ill pediatric patients remains limited. **Conclusions:** Host-response signatures combining TRAIL, IP-10, and CRP demonstrate superior diagnostic performance compared with conventional biomarkers, supporting their use in clinical decision-making for febrile children. Integration of these tools into diagnostic protocols may reduce inappropriate antibiotic prescriptions and prevent progression to critical illness. No study has evaluated a fully integrated multi-biomarker panel, representing an important evidence gap for future prospective research.This work was supported by the project FOCUS: Formare si Orientare pentru Cercetatorii UMFST în Sanatate, contract no. 100455/29.08.2025, project code SMIS 350717, co-funded by PS/688/PS_P3/OP4/ESO4.7/PS_P3_ESO4.7_A6.

Keywords: pediatric fever, pediatric emergency, host-response biomarkers, bacterial-viral discrimination, antimicrobial stewardship

LATE ONSET NEONATAL SEPSIS WITH *PNEUMOCOCCUS* – CASE PRESENTATION

Zsuzsanna Gall[1], Zsuzsanna Moreh[2], Lorena Elena Melit[2], Manuela-Camelia Cucerea[1], Marta Simon[1]

[1] Department of Pediatrics IV, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Neonatal sepsis is defined by the isolation of a pathogen from blood culture. Although neonatal sepsis remains a major cause of morbidity and mortality, *Streptococcus pneumoniae* is an uncommon etiologic agent. Despite the global burden of pneumococcal disease, invasive pneumococcal infection during the neonatal period remains exceptionally rare, with most knowledge derived from isolated case reports and small case series. **Material and methods:** Case Presentation: **Results:** Case Presentation: We report a rare case of late-onset neonatal sepsis caused by *Streptococcus pneumoniae* in a 4-week-old term infant, occurring concomitantly with norovirus enterocolitis. Our patient was born at term and has a 2-year-old sister with incomplete vaccination status, who recently presented with mild upper respiratory symptoms. The infant had been discharged at 20 days of age following hospitalization for acute bronchiolitis, with residual mild cough and nasal congestion. At 25 days of age, he presented to the emergency department with fever and diarrhea. Physical examination revealed a well-nourished infant with pallor, pharyngeal erythema, normal breath sounds, without respiratory distress, generalized hypotonia. Laboratory investigations showed leukocytosis with neutrophilia, mild anemia, elevated C-reactive

protein and procalcitonin levels, and a negative urine analysis. The chest radiography demonstrated bronchopneumonia. Empirical treatment with ceftriaxone was initiated after blood cultures were obtained. Stool viral antigen testing was positive for norovirus, while blood cultures subsequently grew *Streptococcus pneumoniae*. Clinical evolution under 14 days of antibiotic therapy and supportive care was slowly favorable, however, transient elevation of liver enzymes and marked reactive thrombocytosis persisted for approximately six weeks. **Conclusions:** *Streptococcus pneumoniae* is a rare cause of late-onset neonatal sepsis, and its occurrence alongside norovirus enterocolitis may obscure the diagnosis. This case highlights the importance of maintaining a broad differential diagnosis in febrile neonates, even in the presence of an identified viral infection. Early blood culture acquisition and prompt initiation of appropriate antimicrobial therapy remain essential for favorable outcomes. Furthermore, household exposure to incompletely vaccinated siblings may represent a potential source of pneumococcal transmission and should be considered during clinical evaluation.

Keywords: late onset neonatal sepsis, *Pneumococcus*, infant

CHRONIC HEADACHE, A SIMPLE SYMPTOM THAT CAN HIDE SERIOUS DIAGNOSES?

Sanda Lucia Voicu[1], Cristina Elena Gîrbovan[2], Lorena Elena Melit[1], Madalina Maier[3], Zsuzsanna Erzsebet Papp[1], Virginia Bodescu[1], Zsuzsanna Moreh[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[3] other, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Encephalitis comprises a heterogeneous group of neurological disorders characterized by inflammation of the brain parenchyma caused by infectious or immune-mediated mechanisms. Clinical manifestations commonly include fever, altered mental status, seizures, and focal neurological deficits. *Human Herpesvirus 6* (HHV-6) is a ubiquitous herpesvirus with two subtypes, HHV-6A and HHV-6B. While HHV-6B is a frequent cause of primary infection in early childhood, HHV-6-associated encephalitis is uncommon and is typically reported in immunocompromised patients. Cases occurring in immunocompetent children beyond infancy are rare and may pose significant diagnostic challenges. **Material and methods:** case presentation **Results:** Case Presentation: We report the case of a 13-year-old previously healthy girl with HHV6 encephalitis. She was admitted for persistent vomiting, worsening headache, vertigo, and a syncopal episode with transient loss of consciousness. Her symptoms had evolved over approximately two months and included recurrent fronto-parieto-occipital headaches, dizziness and balance disturbances. Two months before admission, she had been diagnosed with chronic sinusitis by cranial CT and received antibiotic treatment. On admission, she was afebrile, mildly somnolent, and hemodynamically stable, with positive Romberg sign and gait instability, but without focal neurological deficits or meningeal signs. Cranial computed tomography excluded acute intracranial pathology and demonstrated chronic sinonasal inflammatory changes. Cerebrospinal fluid analysis showed normal cellularity and biochemistry. Syndromic PCR testing of cerebrospinal fluid detected *Human Herpesvirus 6*. Brain magnetic resonance imaging revealed left mastoiditis and inflammatory changes of the ethmoidal and frontal sinuses, without evidence of intracranial expansive lesions or cerebral edema. Evolution under ceftriaxone, ganciclovir and corticosteroid, symptomatic therapy was favourable. **Conclusions:** This case highlights the diagnostic complexity of HHV-6 encephalitis in an immunocompetent adolescent. The polymorphic clinical presentation and coexistence of chronic sinonasal pathology complicated the differential diagnosis between neurological, infectious, and otorhinolaryngological disorders. Early recognition and comprehensive multidisciplinary evaluation are essential to establish the diagnosis and prevent potentially severe neurological complications.

Keywords: encephalitis, child, human herpes virus

HUMAN PARECHOVIRUS MENINGOENCEPHALITIS IN A NEONATE WITH NORMAL CEREBROSPINAL FLUID FINDINGS: A DIAGNOSTIC CHALLENGE

Ana Stan-Muntean[1], Cristina Oana Mărginean[1], Maria Oana Săsăran[2], Roxana-Cristina Mares[1], Monica Grama[1]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Pediatrics III, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: The aim of this case report is to highlight the diagnostic challenges associated with *Human parechovirus* (HPeV) meningoencephalitis in neonates, wich is an increasingly recognized cause of neonatal system infection. Diagnosis may be challenging because cerebrospinal fluid (CSF) findings are frequently normal

despite confirmed neurological involvement. **Material and methods:** We report the case of a six-days-old female neonate admited with fever (38.5°C), poor feeding, lethargy, and irritability, all showcasing a neonatal sepsis-like illness. Physical examination revealed mild alteration of general condition, erythema surrounding the umbilical stump and jaundice, without meningeal signs or focal neurological deficits. Initial investigations showed mildly elevated C-reactive protein (8,9 mg/L), while blood cultures, urine cultures, respiratory viral testing, and umbilical stump cultures were negative. Transfontanellar ultrasonography demonstrated no abnormalities. Lumbar puncture revealed normal CSF cytology and glucose levels, relatively to serum glucose. Given the need to exclude a central nervous system infection, a multiplex meningitis/encephalitis PCR panel was performed, which detected *Human Parechovirus*. Empirical tratment with Ceftazidim and Ampicilin was initiated at admission and continued for five days, alongside with Dexamethasone and Furosemid as supportive and depletive treatment. **Results:** Clinical evolution was favorable, with normalization of inflammatory markers, restoration of feeding and complete resolution of symptoms. **Conclusions:** This case highlights the important of considering *Human Parechovirus* infection in neonates presenting with fever and sepsis-like manifestations, even when conventional microbiological investigations and CSF analysis are unremarkable. Multiplex PCR testing plays a crucial role in establishing the diagnosis and should be considered early in neonates with unexplained fever and suspected central nervous system involvement. Long-term neurological follow-up remains essential, due to the potential risk of delayed neurodevelopmental sequelae.

Keywords*:* *Human parechovirus*, Neonatal Infection, Meningoencephalitis, Viral central nervous system infection

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INFLAMMATORY STATUS IN EARLY-ONSET NEONATAL SEPSIS

Maria-Andreea Răcean[1], Maria Oana Săsăran[2], Laura-Mihaela Suciu[1], Manuela-Camelia Cucerea[1], Cristina Oana Mărginean[3]

[1] Department of Pediatrics IV, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Pediatrics III, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[3] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Early-onset neonatal sepsis (EONS) is a life-threatening bloodstream infection that occurs in neonates during their first 72 hours of life. As clinical symptoms are subtle and no single biomarker is perfectly reliable on its own, a combination of markers such as C reactive protein (CRP) and procalcitonin (PCT) are frequently quantified. Umbilical cord blood (UCB) cytokines, like interleukin-6 (IL-6) and IL-8 have recently discovered as markers of inflammation and infection and are gaining rapid clinical interest. This study aims to assess if these ILs can predict EONS earlier and more accurately than CRP and PCT. **Material and methods:** 100 term neonates who were born from pregnancies with maternal-fetal infectious risk admitted to the Neonatal Departments of Clinical County Emergency Hospital of Târgu-Mureş and Mureș County Clinical Hospital over a timespan of nine months were analyzed prospectively. The levels of IL-6 and IL-8 were depicted from blood samples taken from the UCB of the neonates. CRP and PCT were detected from neonatal peripheral blood in the first 24 hours of life. The neonates were divided into a study group (n=50), with confirmed EONS and a control group(n=50), without EONS. **Results:** The two study groups were similar in terms of gestational age($p=0.33$), birth weight($p=0.46$), length($p=0.67$), head circumference($p=0.24$), gender distribution($p=0.84$) and Apgar scores at 1 and 5 minutes of life ($p=0.43$, $p=0.33$). We identified rupture of amniotic membranes>18 hours antepartum as a maternal risk factor that contributed to the occurrence of EONS ($p<0.01$, OR=1.68 (95% CI: 0.79-3.39). Statistically significant differences were observed between the two groups in the value of CRP($p<0.01$) and PCT($p<0.01$). UCB IL-6 and IL-8 were higher in study vs control group ($p<0.01$). Statistically significant differences were obtained when we analysed serum maternal IL-6($p<0.01$) and IL-8($p<0.01$) between the two study groups. **Conclusions:** CRP and PCT values are highly valuable for screening of EONS, but UCB IL-6 and IL-8 may predict earlier EONS. Moreover, serum maternal IL-6 and IL-8 could potentially be used in the future for diagnosing EONS. However, further studies on larger cohorts are needed to validate those findings. Acknowledgement: This work was supported by the project FOCUS: Formare si Orientare pentru Cercetatorii UMFST în Sanatate, contract no. 100455/29.08.2025, project code SMIS 350717, co-funded by PS/688/PS_P3/OP4/ESO4.7/PS_P3_ESO4.7_A6.

Keywords: neonate, inflammatory status, cytokines, umbilical cord blood, neonatal sepsis

CHALLENGES IN THE DIAGNOSIS AND MANAGEMENT OF PNEUMONIA COMPLICATED BY PLEURAL EFFUSION IN A PEDIATRIC PATIENT

Antonia Maria Rîmbeţ[1], Adriana Ionela Lăcătuș[1], Roxana Cristina Mareș[1], Andreea Bianca Stoica[1], Cristina Oana Mărginean[1], Rodica Demenciuc[1], Zoltan Derzsi[2]

[1] Department of Pediatrics I, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[2] Department of Pediatric Orthopedics and Surgery, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Parapneumonic pleural effusion is one of the most severe complications of bacterial pneumonia in children and may require surgical intervention despite appropriate initial antibiotic therapy. The aim of this case report is to highlight the diagnostic and therapeutic challenges associated with progressive parapneumonic pleural effusion and to emphasize the importance of timely multidisciplinary management in achieving a favorable outcome. **Material and methods:** An 8-year-old girl was admitted with high fever, productive cough, vomiting and abdominal pain. Laboratory tests showed marked inflammatory syndrome, while chest radiography confirmed right lower lobe pneumonia. Empirical intravenous antibiotic therapy with ceftriaxone (Cefort) was initiated together with intravenous fluid therapy, antipyretics and supportive care. Despite treatment, the clinical course deteriorated, and thoracic computed tomography demonstrated progressive right pleural effusion requiring surgical management. **Results:** The patient underwent minimally invasive thoracotomy with pleural drainage followed by broad-spectrum intravenous antibiotic therapy consisting of ceftriaxone, amikacin and meropenem, subsequently escalated to meropenem and linezolid because of persistent pleural infection. Drain obstruction required surgical replacement during hospitalization. Pleural fluid cytological examination, microbiological cultures, and smear microscopy for *Mycobacterium tuberculosis*, as well as blood cultures, were all negative. Additional microbiological investigations, including multiplex respiratory PCR and urinary antigen tests for *Legionella pneumophila* and *Streptococcus pneumoniae*, were also negative. Clinical and laboratory parameters gradually improved, the pleural drain was successfully removed, and follow-up imaging demonstrated only minimal residual pleural fluid without active pulmonary consolidation, allowing discharge in good clinical condition. **Conclusions:** This case emphasizes the importance of repeated imaging assessment and timely surgical intervention in complicated parapneumonic pleural effusion. Close collaboration between pediatricians, pediatric surgeons and infectious disease specialists contributed to a favorable clinical outcome.

Keywords: parapneumonic pleural effusion, complicated pneumonia, multidisciplinary management, pleural drainage

ASPIRATION PNEUMONIA IN A CHILD WITH MILD ACUTE BRONCHIOLITIS

Virginia Bodescu[1], Lorena Elena Melit[1], Zsuzsanna Moreh[1], Loic Dijoux[1]

[1] Department of Pediatrics II, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Aspiration pneumonia is a lung infection caused by inhaling contaminated material (oro-pharyngeal secretions or stomach contents) into the lower airways. It appears mostly in premature babies because of functional immaturity, gastroesophageal reflux, and dysfunction of airway defense mechanisms **Material and methods:** The authors present the case of a 2-month-old ex-premature baby, admitted with a one day history of cough and runny nose. **Results:** Initially, the mother presented to the ER, where the vital signs were within normal limits, on examination - wheezing, intercostal retractions, and nasal obstruction. The baby looked fine, no fever, and he was not tired after feeding. The lab tests revealed anemia, normal WBC and platelets, normal CRP. In addition, a viral test was positive for *Respiratory Syncytial Virus* to confirm de diagnosis of bronchiolitis suggested by history and clinical picture. As the baby was small for age (GA - 39 weeks, BW – 1640 gr) and have had some medical problems as a new-born (neonatal infection, jaundice and feeding problems) he was considered at risk and sent to the ward for observations. He was treated according to his condition, i.e. mild bronchiolitis, his clinical evolution was very good and in short time he was ready to be discharged. Repeated lab results – still normal (except for anemia). But, at final examination, his condition suddenly deteriorated: dyspnea, piston-like head movements, flaring of the nostrils, and SaO2: 91% in room air. So, change of plans: oxygen, steroids, bronchodilators and antibiotics. Differential diagnosis of complications: bacterial infection, worsening o bronchiolitis or aspiration pneumonia were the main on the list. Indeed, we gathered additional information from mother – sudden onset after feeding and vomits. A pulmonary ultrasonography was readily available showing an air

bronchogram on the right superior area, and B lines (non-specific aspect). A Chest X ray was available after 3 days – ground glass opacities on the same area, specific for aspiration pneumonia, with total resolution after 10 days. **Conclusions:** Aspiration pneumonia is a very serious complication in small babies, and pulmonary ultrasonography may be used as a POCUS method of diagnostic – it is not specific, but very sensitive.

Keywords: Aspiration pneumonia, children, POCUS

HIV PREVENTION FIRST: FROM NEW INFECTIONS TO CRITICAL CARE

HIV AND OTHER SEXUALLY TRANSMITTED INFECTIONS

Norbert Kovács[1], Iringó Erzsébet Zaharia-Kézdi[1], Anca Meda Văsieșiu[1], Ákos Vince Andrejkovits[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Sexually transmitted infections (STIs) remain highly prevalent worldwide, especially among people living with HIV, in whom coinfection rates are significantly higher than in the general population. Shared transmission routes and immunological vulnerability contribute to the frequent coexistence of HIV and other STIs. This study evaluates the temporal relationship and diagnostic patterns of concomitant STIs among HIV-positive patients. **Material and methods:** We conducted a retrospective observational study including adult HIV-positive patients registered in the electronic database of the Regional HIV Center of Mureș County over the last 8 years (January 1, 2018 – March 1, 2026). The study included patients diagnosed with both HIV infection and at least one additional STI, irrespective of whether the STI or HIV diagnosis was established first. Deceased patients and cases with incomplete STI-related data were excluded. Of the 57 initially identified cases, 28 fulfilled the inclusion criteria and were included in the final analysis. **Results:** The cohort was predominantly male (23 men, 5 women), with a mean age of 37.6 years (range: 23–60). The mean duration since HIV diagnosis was 9 years (range: 0.5–34). At diagnosis, 12 patients were classified as CDC stage C3. Mean HIV viral load was 204,444 copies/mL (range: 41–2,069,819), while mean CD4+ count was 346 cells/mm³ (range: 9–1,278). Opportunistic infections were identified in 11 patients. Seventeen patients reported heterosexual orientation, with a mean of 7 sexual partners in the previous year (range: 0–50). Sexual contact with prostitutes was reported in 6 cases, and 3 patients reported contact with intravenous drug users. In 17 cases, STI screening led to the diagnosis of asymptomatic HIV infection. HBsAg positivity was identified in 8 patients, anti-HCV antibodies in 2, TPHA positivity in 23, VDRL positivity in 9, and condyloma acuminata in 3 cases. **Conclusions:** Syphilis was the most frequently identified STI among HIV-positive patients in our cohort. The relatively low number of recorded cases likely reflects the limitations of retrospective electronic data collection. Dedicated regional and national registries would help to improve epidemiological surveillance and support future prospective studies.

Keywords: HIV, Syphilis, Sexually Transmitted Infections

TRANSVERSE MYELITIS IN AN HIV POSITIVE PATIENT

Andrea Incze[1], Victoria Birlutiu[2], Andreea Ghibu[2], Nina Ioana Bodnar[1], Adrian Vlad Pop[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș
[2] Department of Infectious Diseases, Lucian Blaga University of Sibiu

Background: Transverse myelitis (TM) is a rare condition in HIV positive patients, can appear during acute HIV, as vacuolar myelopathy in advanced HIV with low TCD4+ lymphocyte count, or caused by associated infections (herpes viruses, syphilis). The main symptoms are paraparesis, sensorial disorders with a defined rostral level, autonomic dysfunction. There is mild pleocytosis and increased protein level in the CSF, gadolinium enhancement of a focal area on spinal MRI. Therapy consists of high dose corticosteroids, intravenous immunoglobulin, plasmapheresis, specific treatment of the identified pathogens, and antiretrovirals. The outcome can be favorable, or with neurological sequelae, relapses can occur, lethal evolution is possible. Material and methods: The case of a 32-years-old patient is presented, known with herpes zoster a year before, and vertebral traumatism in childhood, with a gradual onset of paraparesis, sensory disorders below Th (thoracic) 5 level, urinary retention, who underwent brain and spinal CT scan showing an old posttraumatic compression of Th4 vertebra, unresponsive to NSAIDs. **Material and methods:** The case of a 32-years-old patient is presented, known with herpes zoster a year before, and vertebral traumatism in childhood, with a gradual onset of paraparesis, sensory disorders below Th (thoracic) 5 level, urinary retention, who underwent brain and spinal CT scan showing an old posttraumatic compression of Th4 vertebra, unresponsive to NSAIDs. **Results:** Spinal MRI revealed a T2 hyperintense and T1 hypointense lesion between C6 (cervical) -Th6 level, edema and contrast enhancement at Th1-Th4 level, interpreted as transverse myelitis. Serological tests were positive for HIV, TPHA and RPR tests were positive, quantitative VDRL negative for syphilis. CSF analysis showed slight pleocytosis, CSF syphilis serology was negative, CSF HIV viral load and serum HIV viral load were high, the TCD4+ lymphocyte count was
93 cells/mm^3. Multiplex PCR performed from CSF was negative, tuberculosis was ruled out. The patient developed right neuroretinitis. The outcome was favorable under antibiotic therapy for syphilis, high dose corticosteroids, antiretrovirals, neurotrophic agents, with partial regression of the neurological symptoms. **Conclusions:** Transverse myelitis raises differential diagnostic challenges regarding spinal traumatic lesions, neurosyphilis and HIV associated vacuolar myelopathy reflected by this case. Multidisciplinary cooperation is necessary in the

management of TM.

Keywords: neurosyphilis, AIDS, focal spinal inflammation, late presenter HIV, transverse myelitis

TRENDS IN ADVANCED HIV DISEASE AT DIAGNOSIS BETWEEN 2014 AND 2025

Adriana Topan[1], Cristian Jianu[1], Irina Filipescu[1], Mihai Călin[2], Daniel Leucuta[3], Mihaela Lupse[1], Violeta Briciu[1]

[1] Department of Internal Medicine V, Iuliu Haţieganu University of Medicine and Pharmacy, Cluj-Napoca

[2] other, other

[3] Department of Informatics, Iuliu Haţieganu University of Medicine and Pharmacy, Cluj-Napoca

Background: Despite major progress in HIV testing and antiretroviral treatment advanced HIV disease (AHD) at diagnosis remains a major challenge. According to the 2024 ECDC HIV/AIDS surveillance report, 30.6% of newly diagnosed HIV patients had a CD4 count below 200 cells/mm3 at the time of diagnosis. **Material and methods:** This retrospective study aims to evaluate temporal trends and factors associated with advanced disease among newly diagnosed people living with HIV (PWH) from 2014 to 2025. Newly diagnosed PWH with CD4 count less than 200 cells/mm3 were included. Patients with a CD4 count below 50 cells/mm3 were classified as having very advanced HIV disease. In the statistical analysis, Fisher's exact test, the Kruskall -Wallis test, and multivariable logistic regression models were used. **Results:** During the study period a total of 522 people were newly diagnosed with HIV. Among those, 270 cases (51.72%) met the inclusion criteria. The cases were analyzed across three periods: 2014-2018; 2019-2022; 2023-2025. There were 88 (53.01%) cases in the first period, 83 (64. 34%) in the second period and 99 (43.61%) in the third period. The median age was 38 years old. 77% of the cases were male, and 57.5% were from urban areas. The main route of transmission was heterosexual in 72.6% of cases. The median CD4 count was 62 cells/mm3, and the median viral load was 501800 copies/ml. 43.7% of all cases had a CD4 count less than 50 cells/mm3. Forty-four cases required admission to the intensive care unit. Sixty cases (22.2%) died. No significant differences were observed in demographic factors or deaths across the three periods. ICU admission was significantly lower in the 2019-2022 period. No significant differences were found regarding the opportunistic infections across the three periods. Hower, a significant increase was noted in cases of pulmonary tuberculosis and Kaposi's sarcoma. **Conclusions:** No overall decrease in advanced disease at diagnosis was observed across periods, suggesting ongoing gaps in testing and late diagnosis. MSM transmission increased significantly in the most recent period, indicating a shift in transmission patterns. The observed increases in pulmonary tuberculosis cases warrants further investigation into potential epidemiological or diagnosis factors.

Keywords: HIV infection, advanced disease, temporal trends

HIV–CMV COINFECTION: A CASE SERIES OF THREE PATIENTS

Erzsébet Iringó Zaharia-Kézdi[1], Norbert Kovács[1], Nina Ioana Bodnar[1], Andrea Incze[1], Ákos Vince Andrejkovits[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: *Human cytomegalovirus* (CMV) remains one of the most important opportunistic pathogens in individuals with advanced *Human Immunodeficiency Virus* (HIV) infection. Despite advances in HIV care, CMV disease remains a relevant clinical challenge across both pediatric and adult populations. **Material and methods:** We present three cases of HIV–CMV coinfection. **Results:** Case 1. A 53-year-old man presented with wasting syndrome. Upper gastrointestinal endoscopy raised suspicion of lymphoma or Kaposi sarcoma. Further evaluation revealed advanced HIV infection with severe immunosuppression (CD4+ T-cell count 114 cells/μL; HIV RNA 1,075,865 copies/mL), gastrointestinal Kaposi sarcoma, and CMV-associated gastrointestinal disease. CMV-DNA was detectable (712 IU/mL), ophthalmologic assessment excluded CMV retinitis. Histopathology demonstrated CMV-positive gastric inclusions within granulation tissue, duodenal gastric metaplasia, and increased colonic epithelial apoptosis. Treatment with valganciclovir and combination antiretroviral therapy resulted in favorable clinical, virological, and immunological outcomes, with subsequent clearance of CMV viremia. Case 2. A 43-year-old male presented with a 3-month history of unintentional weight loss (18 kg), lower urinary tract symptoms (dysuria, urinary frequency, and incontinence), fever, chills, dysphagia, and oral candidiasis. Diagnostic evaluation revealed advanced HIV infection with profound immunosuppression (HIV RNA 152,508 copies/mL; CD4+ T-cell count 18 cells/μL). Blood and urine cultures were positive for Group B *Salmonella*, and treponemal serology (TPHA) was reactive. During hospitalization, the patient developed neurological manifestations, including dysmetria, bilateral hyperreflexia, and intention tremor. Cerebrospinal fluid multiplex PCR for

meningitis/encephalitis pathogens detected CMV-DNA, supporting the diagnosis of CMV-associated central nervous system disease. Antiviral therapy with intravenous ganciclovir followed by oral valganciclovir was initiated, alongside combination antiretroviral therapy, targeted antimicrobial treatment, and *Pneumocystis jirovecii* pneumonia prophylaxis. The patient subsequently demonstrated a favorable clinical response. Case 3. A 5-month-old child with perinatally acquired HIV infection (clinical-immunological stage C3) receiving antiretroviral therapy with neurodevelopmental delay and failure to thrive. Medical history included pulmonary tuberculosis, *Pneumocystis jirovecii* pneumonia, chronic respiratory failure, primary CMV infection, intestinal pneumatosis and hepatic involvement. The clinical course under multidisciplinary management, on antiretroviral and antiviral therapy was slowly favorable. **Conclusions:** These cases illustrate the diverse clinical spectrum of CMV disease in patients with advanced HIV infection, profound immunosuppression and multiple coaffections.

Keywords: HIV, CMV, coinfection, severe immunosuppression

CRITICALLY ILL PATIENTS WITH HIV INFECTION IN THE INTENSIVE CARE UNIT

Florentina Dumitrescu[1]

[1] Department of Infectious Diseases, University of Medicine and Pharmacy of Craiova

Background: The widespread use of combination antiretroviral therapy (ART) has significantly changed the epidemiology, clinical presentation, and outcomes of critically ill patients living with HIV. **Material and methods:** I analyzed the results of recent clinical studies and publications in the literature. I detailed a few cases from personal experience. **Results:** In the pre-ART era, intensive care unit (ICU) admissions were predominantly associated with opportunistic infections and AIDS-defining illnesses, including *Pneumocystis jirovecii* pneumonia, disseminated tuberculosis, cryptococcal meningitis, cerebral toxoplasmosis, cytomegalovirus infection, *Mycobacterium avium* complex disease. These conditions frequently resulted in acute respiratory failure, sepsis, and multiple organ dysfunction, leading to high mortality rates. In the modern ART era, the incidence of opportunistic infections has markedly decreased, and the spectrum of ICU admissions has shifted toward conditions commonly observed in the general population. Sepsis, severe bacterial pneumonia, acute respiratory failure, cardiovascular diseases, metabolic disorders, trauma, and postoperative complications now account for a growing proportion of ICU admissions among people living with HIV. Nevertheless, opportunistic infections remain an important cause of critical illness in patients with advanced immunosuppression, delayed HIV diagnosis, poor treatment adherence, or virological failure. The management of critically ill HIV-infected patients requires a multidisciplinary approach integrating standard critical care principles with HIV-specific considerations. Early assessment should include CD4 cell count, HIV viral load, previous antiretroviral exposure, and evaluation for opportunistic infections. ART administration in the ICU may be complicated by impaired gastrointestinal absorption, organ dysfunction, and significant drug–drug interactions with sedatives, antimicrobials, antifungals, and vasopressors. While ICU mortality rates approached 70–90% during the pre-ART era, contemporary studies report mortality rates ranging between 7% and 20%. Recent European data demonstrated a reduction in ICU mortality from 14% to 7%, corresponding to an approximately 50% relative decrease. **Conclusions:** HIV is no longer considered an independent predictor of poor prognosis when patients have access to effective ART and contemporary intensive care management. This evolution reflects the remarkable progress achieved in HIV treatment and critical care medicine over the past two decades.

Keywords: HIV, critically ill, intensive care unit

RAPID DIAGNOSTICS AND MODERN TECHNOLOGIES IN THE DIAGNOSIS OF INFECTIONS

BACTERIAL CULTURE STILL SAVES LIVES – THE ROLE OF CONVENTIONAL DIAGNOSTICS ALONGSIDE MOLECULAR METHODS

Edit Szekely[1]

[1] Department of Clinical Laboratory, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Blood culture remains an essential method for managing infections in critically ill patients, despite the remarkable progress in molecular testing. Its main advantage lies in its ability to isolate the etiologic agent, thereby providing not only precise identification of the microorganism but also the possibility to test antibiotic susceptibility. This information is crucial for guiding targeted antimicrobial therapy and for limiting the inappropriate use of antibiotics. **Material and methods:** Current molecular methods, although rapid and sensitive, have important limitations: they require a positive blood culture for optimal performance and detect a limited number of pathogens and resistance mechanisms. Identified resistance genes do not necessarily imply phenotypic expression of resistance, and their absence does not preclude other resistance mechanisms or guarantee the effectiveness of antimicrobial therapy. Thus, rapid molecular methods can help guide treatment, but they cannot yet replace blood culture in clinical practice. **Results:** Blood culture results can be accelerated by optimizing pre-analytical steps (proper collection, adequate volume), using continuous automated detection systems, applying rapid identification techniques directly from positive bottles (e.g., MALDI-TOF), performing direct antibiograms from blood culture bottles, and implementing rapid communication algorithms for preliminary results to the clinician. **Conclusions:** In conclusion, blood culture remains a cornerstone in the microbiological diagnosis of severe infections, integrated synergistically with modern molecular methods.

Keywords: Blood culture, Molecular diagnostics, Antibiotic susceptibility, Antimicrobial therapy, Rapid identification techniques

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HOW SYNDROMIC MULTIPLEX PANELS TRANSFORM CLINICAL DECISION-MAKING IN SEVERE INFECTIONS

Mirela Flonta[1]

[1] Laboratory, Clinical Hospital of Infectious Diseases, Cluj-Napoca, Romania

Background: In the intensive care unit, the management of severe infections remains a major challenge, as the time required to identify the causative pathogen has a direct impact on patient outcomes. Clinical manifestations such as fever, leukocytosis, hypotension, and organ dysfunction are highly heterogeneous and may occur in both infectious and non-infectious conditions. In this critical setting, conventional culture-based microbiological diagnosis is limited by the prolonged time required to obtain results and by the marked reduction in sensitivity following the initiation of empirical antimicrobial therapy, frequently leading to the use of broad-spectrum antibiotics. The development of PCR-based syndromic multiplex panels has transformed the paradigm of microbiological diagnosis by enabling the rapid and simultaneous detection of a wide range of pathogens and antimicrobial resistance markers. **Material and methods:** To highlight the impact of syndromic multiplex panels on clinical decision-making in patients with severe infections and their role in optimizing antibiotic use. Data from recent literature regarding the use of syndromic panels in sepsis, severe respiratory infections, central nervous system infections, and gastrointestinal infections were reviewed, with a focus on their impact on time to etiological diagnosis, modifications of anti-infective therapy, and clinical outcomes. **Results:** Multiplex technologies provide crucial diagnostic information within 1–2 hours, creating a unique therapeutic window of opportunity. The simultaneous detection of bacterial, viral, and fungal pathogens, together with genetic resistance markers, enables rapid personalization of antimicrobial therapy. However, the speed of obtaining results also increases the burden of clinical interpretation, with the potential risk of confusing colonization with active infection or overestimating the significance of residual, non-viable DNA fragments. Therefore, close collaboration within the Antimicrobial Stewardship team is essential. **Conclusions:** Syndromic multiplex panels represent an innovative diagnostic tool that is transforming clinical decision-making in severe infections by facilitating individualized therapy, promoting the judicious use of antimicrobials, and improving patient outcomes. Their integration into diagnostic algorithms, together with close collaboration among intensivists, infectious diseases specialists, and microbiologists, is essential to fully exploit the benefits offered by precision medicine in infectious diseases.

Keywords: Syndromic multiplex panels, Clinical decision-making, Severe infections, Antimicrobial stewardship, Rapid molecular diagnostics

THE EUCAST GUIDELINES FOR ANTIMICROBIAL SUSCEPTIBILITY TESTING, ANTIBIOTIC PHARMACOKINETICS/PHARMACODYNAMICS, AND PERSONALIZED MEDICINE**

Marina Indreas[1]

[1] Clinic Laboratory, Bacau County Emergency Hospital

Background: Antibiotic therapy is rapidly changing from a one-size-fits-all approach to a highly individualized model of precision medicine. This evolution represents the adaptation to the unique genetic profile of the patient and the specific metabolism and profiles of pathogens to optimize antibiotic choice, dosage and duration of treatment, with the aim of increasing efficacy, decreasing adverse effects and combating antimicrobial resistance. **Material and methods:** The shift to personalized antibiotic therapy is based on several essential pillars to tailor treatment precisely to the patient's needs: pharmacogenomics, TDM, rapid diagnostics, AI and predictive modeling. **Results:** EUCAST breakpoints are linked to the doses and routes of administration listed by EUCAST in the supporting documents and in the breakpoint table, page "Dosages used to define breakpoints". **Conclusions:** All clinical EUCAST breakpoints are calibrated according to the achievable exposure level of the microorganism. Exposure is a function of how the route of administration, dose, dosing interval, infusion time, and distribution, metabolism, and excretion of the antibiotic will affect the infecting microorganism at the site of infection. Following population simulations of therapeutic efficacy, individual differences in pharmacokinetics are taken into account in the calculations leading to pharmacodynamic indices.

Keywords: Personalized antibiotic therapy, Pharmacogenomics, Therapeutic drug monitoring (TDM), EUCAST breakpoints, Pharmacokinetics/pharmacodynamics (PK/PD)

ANTIMICROBIAL RESISTANCE (AMR): IMPACT, DETECTION, AND CONTROL

PREVALENCE OF RECTAL CARRIAGE OF CARBAPENEM-RESISTANT ORGANISMS: DATA FROM THE REVERSE PROJECT AT MUREȘ COUNTY CLINICAL HOSPITAL

Maria-Evelina Gorea[1], Anca Meda Văsieșiu[2], Mihai Negrea[3], Cristina Elena Gîrbovan[2], Teodora Cighir[4], Valentina Negrea[2], Anca Puică[4], Cristian-Mihail Niculae[5], Adriana Hristea[5]

[1] Department of Infectious Diseases, National Institute for Infectious Diseases "Prof. Dr. Matei Bals" - Bucharest

[2] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

[3] other, other

[4] Department of Infectious Diseases, other

[5] Department of Infectious Diseases, Carol Davila University of Medicine and Pharmacy, Bucharest

Background: The REVERSE project aims to reduce the burden of antimicrobial resistance through infection prevention and control (IPC) and antimicrobial stewardship (AMS) interventions. Point prevalence surveys (PPS) were conducted to assess the prevalence of carbapenem-resistant *Enterobacterales* (CRE), carbapenem-resistant *Pseudomonas aeruginosa* (CRPA), and carbapenem-resistant *Acinetobacter baumannii* (CRAB). This study aims to describe the trend of the prevalence of carbapenem-resistant organisms in Mureș County Clinical Hospital. **Material and methods:** Patients admitted to REVERSE wards underwent rectal swab screening at three different time points: before IPC measures targeting hand and environmental hygiene along with active surveillance implementation (PPS1), before AMS implementation (PPS2), and an end-point measurement (PPS3). Changes in prevalence across PPS1, PPS2, and PPS3 were analyzed. **Results:** A total of 710 patients undergoing rectal swab were included with 231, 246, and 233 samples collected during PPS1 PPS2 and PPS3 respectively. Median age of the patients was 68(58-75), 67(55-74), and 70(58-76) years, and the median time from admission to rectal swab collection was 3.5(2-6), 3(2-5), and 3(1-5) days for PPS1, PPS2 and PPS3 respectively. The number of samples positive for one or more CRE was 17(7.4%), 4(1.6%), and 9(3.9%) in PPS1, PPS2, and PPS3, respectively. The distribution of carbapenem-resistant isolates in PPS1, PPS2 and PPS3 was as follows: CR *Klebsiella pneumoniae* 11(4.8%), 4(1.6%), and 9(3.9%) respectively; CR *Escherichia coli* 5(2.2%), 1(0.4%) for PPS1 and PPS2 with no isolates identified in PPS3; *Enterobacter* spp. 3(1.3%), *Klebsiella* spp. 1(0.4%), and *Providencia stuartii*: 1(0.4%) in PPS1, with no isolates identified in PPS2 and PPS3. CRAB and CRPA prevalence in PPS1 was 3 (1.3%) each, with no isolates identified in PPS2 or PPS3. Ward-specific prevalence of carbapenem-resistant organisms was as follows: General Surgery 12 (12.1%), 1(1.0%), and 3(4.0%); ICU 4(36.4%), 2(11.8%), and 5(26.3%) in PPS1, PPS2 and PPS3 respectively. Internal Medicine 3(3.2%) in PPS1, 1(0.9%) in PPS2, with no isolates in PPS3; Hematology-Oncology 1(3.2%) only in PPS3. **Conclusions:** A marked reduction in CRE, CRPA, and CRAB prevalence was observed in PPS2 compared with PPS1, particularly for *K. pneumoniae*. PPS3 showed a partial increase driven exclusively by *K. pneumoniae*, while overall prevalence remained below baseline levels.

Keywords: carbapenem-resistant *Enterobacterales*, carbapenem-resistant *Pseudomonas aeruginosa*, carbapenem-resistant *Acinetobacter baumannii*, screening, rectal carriage

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HEALTHCARE-ASSOCIATED INFECTIONS CAUSED BY CARBAPENEM-RESISTANT ORGANISMS: A GROWING CLINICAL THREAT

Adriana Hristea[1], Maria-Evelina Gorea[2], Laura-Georgiana Țîrlescu[2], Mihai Negrea[3], Cristina Elena Gîrbovan[4], Valentina Negrea[4], Teodora Cighir[2], Anca Puică[2], Cristian-Mihail Niculae[1], Anca Meda Văsieșiu[4]

[1] Department of Infectious Diseases, Carol Davila University of Medicine and Pharmacy, Bucharest

[2] Department of Infectious Diseases, other

[3] other, other

[4] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Healthcare-associated infections (HAI) caused by carbapenem-resistant organisms are a major concern due to their impact on patient outcomes and limited therapeutic options. This study presents the local epidemiological data from Mureș County Clinical Hospital, focusing on infections caused by carbapenem-resistant *Enterobacterales* (CRE), *Acinetobacter baumannii* (CRAB), and *Pseudomonas aeruginosa* (CRPA) within the REVERSE project. **Material and methods:** Information on pathogen distribution, involved hospital wards, patient risk factors, infection types, and temporal trends in the incidence and proportions of CRE, CRAB, and CRPA was analyzed using data collected in the REVERSE database between March 2022 and January 2026. **Results:** A total of 230 patients were identified, with a mean age of 66.5 ± 15 years. CRAB, CRE and CRPA were isolated in 42.6%, 41.3% and 16.1% of patients respectively. Most cases occurred in the intensive care unit (ICU) (66.1%),

followed by surgical (21.3%) and internal medicine wards (10.9%). The ICU accounted for the majority of CRPA (78.4%), CRAB (70.4%), and CRE (56.8%) infections. Among risk factors, central venous catheterization and mechanical ventilation were present in 67.8% and 54.8% of patients, mostly in CRAB group, 74.5% and 62.2% of patients respectively. Urinary catheters were present in 90.9% of cases. Previous antibiotic exposure was reported in 89.1% of patients, reaching 94.6%, 88.4%, and 87.8% in CRPA, CRE, and CRAB infections, respectively. Pneumonia was the most common infection overall (31.7%), followed by bloodstream (19.1%) and urinary tract infections (17.4%). Urinary tract infections predominated among CRE cases (32.6%), whereas pneumonia was the leading presentation in CRAB (46.9%) and CRPA (32.4%) infections. Following the first two quarters after the implementation of the infection prevention and control (IPC) intervention, CRAB and CRPA infections showed a decreasing trend from 73 to 19 (−74%) and from 28 to 7 (−75%) cases respectively. In contrast, CRE exhibited an overall upward incidence trend, despite fluctuations in absolute case numbers. **Conclusions:** These findings suggest that CRAB and CRE represented most HAI mainly in ICU. Although reductions in CRAB and CRPA infections following IPC interventions was noted, the persistent quarterly increase in CRE incidence underscores the need for ongoing surveillance and targeted control measures.

Keywords: Healthcare-associated infections, carbapenem-resistant *Enterobacterales*, carbapenem-resistant *Acinetobacter baumannii*, carbapenem-resistant *Pseudomonas aeruginosa*, REVERSE project

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ANTIMICROBIAL RESISTANCE: A GLOBAL THREAT WITH MAJOR IMPLICATIONS FOR THE MANAGEMENT OF CRITICALLY ILL PATIENTS

Mircea Stoian[1]

[1] Department of Anesthesiology and Intensive Care Medicine (II) and Emergency Medicine, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Antimicrobial resistance (AMR) is one of the greatest challenges facing modern medicine and has been recognized by the World Health Organization as a major threat to global public health and patient safety. Beyond infectious diseases, AMR has profound implications for clinical outcomes, therapeutic effectiveness, healthcare costs, and the sustainability of healthcare systems. The increasing prevalence of multidrug-resistant pathogens has made AMR a major driver of morbidity and mortality worldwide. Critically ill patients are particularly vulnerable to this phenomenon. In intensive care units (ICUs), the extensive use of broad-spectrum antibiotics, invasive procedures, severe comorbidities, and the risk of nosocomial transmission promote the emergence and dissemination of resistant microorganisms. Consequently, selecting appropriate empirical antimicrobial therapy has become increasingly challenging, while delays in initiating active treatment are associated with progression to sepsis, multiple organ dysfunction, and increased mortality. The global burden of AMR is substantial. In the European Union and European Economic Area, more than 35,000 deaths annually are attributed to infections caused by antibiotic-resistant bacteria, representing a burden comparable to that of influenza, tuberculosis, and HIV/AIDS combined. In the United States, over 2.8 million antimicrobial-resistant infections and more than 35,000 deaths are reported each year, exceeding 3 million infections and approximately 48,000 deaths when *Clostridioides difficile* infections are included. The clinical consequences of AMR include delayed effective therapy, prolonged ICU and hospital stay, increased use of last-resort antibiotics, higher healthcare costs, and poorer patient outcomes. Moreover, AMR threatens the success of modern medical practice, including major surgery, organ transplantation, oncology, and the management of critically ill and immunocompromised patients. Addressing this challenge requires an integrated strategy based on continuous epidemiological surveillance, rapid microbiological diagnostics, rigorous infection prevention and control measures, and effective antimicrobial stewardship programs. Future advances, including rapid molecular diagnostics, unit-specific antibiograms, and artificial intelligence–assisted decision support, may enable more precise antimicrobial therapy and improve clinical outcomes. AMR is no longer a future concern but a present reality requiring coordinated action within the One Health framework.

Keywords: sepsis, antimicrobian resistant, multidrug-resistant pathogens, Intensive care

CLINICAL IMPACT OF MDR GRAM-NEGATIVE BACILLI COLONIZATION

Cristian-Mihail Niculae[1], Laura-Georgiana Țîrlescu[1], Raluca-Mihaela Matoru[1], Maria-Evelina Gorea[1], Alexandru Mihai[2], Andreea-Mihaela Sandu[2], Daniela Talapan[2], Adriana Hristea[1]

[1] Department of Infectious Diseases, Carol Davila University of Medicine and Pharmacy, Bucharest

[2] Department of Microbiology, Carol Davila University of Medicine and Pharmacy, Bucharest

Background: Rectal carriage of multidrug-resistant Gram-negative bacilli (MDR-GNB) is increasingly recognized as an important risk factor for the development of subsequent invasive infections among hospitalized patients. Identifying patients colonized with MDR-GNB at an early stage may support clinical decision-making, particularly regarding the selection of appropriate empirical antimicrobial therapy for individuals at increased risk of infection. **Material and methods:** In this retrospective study, adult inpatients admitted during 2023–2024 with severe infections caused by Gram-negative bacteria were assessed, including the relationship between bloodstream infections and prior rectal carriage of multidrug-resistant Gram-negative organisms (MDR-GNB). **Results:** We retrospectively reviewed all 116 consecutive cases of GNB-associated systemic infections. A rectal swab screening was performed in 61 (52.5%) patients. A strong relationship was observed between MDR-GNB rectal carriage and subsequent systemic infections caused by these pathogens, reaching statistical significance ($p<0.001$). Phenotypic agreement between screening and bloodstream isolates was identified in 60.7% of cases, indicating that rectal surveillance cultures anticipated the antimicrobial resistance profile of the infecting organism in more than half of the patients. Diagnostic accuracy analyses showed that, for ESBL-producing *Enterobacterales*, rectal screening achieved a sensitivity of 46.2%, a specificity of 79.2%, and a negative predictive value of 84.4% ($p=0.06$). In the case of carbapenem-resistant organisms, the corresponding values were 50% sensitivity, 91.5% specificity, and an NPV of 86%, with a statistically significant association ($p<0.001$). **Conclusions:** Identification of MDR-GNB intestinal carriage may facilitate individualized antimicrobial decision-making and support stewardship interventions aimed at minimizing inappropriate broad-spectrum antibiotic use in systemic infections.

Keywords: rectal swab, ESBL, MDR

VARIA

COMPARATIVE INFLAMMATORY PROFILES IN HEMODIALYSIS AND NON-DIALYSIS PATIENTS WITH INFECTIOUS DISEASES: EVIDENCE OF IMMUNE DYSREGULATION BEYOND CONVENTIONAL BIOMARKERS

Ștefan-Rareș Catalina-Cîmpean[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Maintenance hemodialysis (HD) is linked to chronic inflammation and immune dysregulation, potentially modifying host responses to acute infection. This study characterized inflammatory profiles in HD patients hospitalized with infections versus a non-hemodialysis cohort and assessed a novel composite inflammatory index. **Material and methods:** Laboratory parameters included leukocyte, neutrophil, and lymphocyte counts, neutrophil-to-lymphocyte ratio (NLR), erythrocyte sedimentation rate (ESR), fibrinogen, C-reactive protein (CRP), hemoglobin, creatinine, and urea. The HD-Inflammation Score was defined as CRP + neutrophil count − lymphocyte count. Shapiro-Wilk test assessed normality. Non-parametric statistical tests were used (Mann-Whitney U Spearman correlation). Statistical significance was set at $p < 0.05$. **Results:** A retrospective observational study included 44 HD patients with acute infectious diseases and an exploratory non-HD cohort (n = 88) with similar infectious etiologies. Compared with non-HD patients, HD patients had lower leukocytes (7.96 vs. 8.92 ×10³/μL, p = 0.002), neutrophils (5.10 vs. 6.00 ×10³/μL, p = 0.005), lymphocytes (1.05 vs. 1.58 ×10³/μL, p = 0.001), and hemoglobin (10.07 vs. 13.30 g/dL, p < 0.001). They had higher creatinine (4.40 vs. 0.91 mg/dL, p < 0.001) and urea (86.44 vs. 32.65 mg/dL, p < 0.001), and lower fibrinogen (363.3 vs. 463.0 mg/dL, p < 0.001). CRP and ESR did not differ significantly (14.95 vs. 20.70 mg/L, p = 0.862; 43.5 vs. 35.5 mm/h, p = 0.518). CRP correlated with ESR (ρ = 0.648, p < 0.001), and neutrophils correlated with leukocytes (ρ = 0.684, p < 0.001). The HD-Inflammation Score showed moderate discrimination (AUC = 0.656) with an optimal cut-off of 14.1, yielding 82.4% sensitivity and 44.4% specificity (Youden index = 0.268). **Conclusions:** HD patients exhibit a distinct infection-associated inflammatory profile characterized by anemia, lymphopenia, reduced leukocyte and neutrophil counts, and persistent inflammatory activation. CRP and ESR did not differentiate HD from non-HD patients. The HD-Inflammation Score may provide complementary information for infection assessment and risk stratification, pending validation in larger cohorts.

Keywords: Hemodialysis, Infectious diseases, Inflammation, C-reactive protein, HD-Inflammation Score

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A DIAGNOSTIC CROSSROAD: CONCOMITANT *CLOSTRIDIOIDES DIFFICILE* INFECTION AND NEW-ONSET SEVERE ULCERATIVE COLITIS IN A YOUNG ADULT

Elena Vanda Ciudin[1], Vlad Nicolae Urzica[1], Maria-Elena Cocuz[2]

[1] Infectious diseases, Clinical Hospital of Pneumology and Infectious Diseases, Brașov

[2] other, Transylvania University of Brașov

Background: *Clostridioides difficile* infection (CDI) and Ulcerative colitis (UC) may coexist and represent a major diagnostic challenge because both can present with severe acute colitis. We report a case of inaugural ulcerative colitis initially interpreted as severe *Clostridioides difficile* enterocolitis. **Material and methods:** A 25-year-old previously healthy male was admitted with severe abdominal pain, profuse watery diarrhea (10-15 stools/day), vomiting, and an 8 kg weight loss over two weeks. At symptom onset, approximately one week before admission, stool assays for *Clostridioides difficile* glutamate dehydrogenase (GDH) antigen and toxins A/B were negative, whereas fecal calprotectin was markedly elevated (1,470 μg/g), suggesting significant intestinal inflammation. One day before admission, investigations performed at another institution revealed marked leukocytosis, elevated inflammatory markers, and abdominal computed tomography findings consistent with rectocolitis. Repeat stool testing became positive for *C. difficile* GDH antigen and toxins A/B, leading to the diagnosis of moderate CDI. Outpatient treatment with metronidazole and probiotics was initiated, without clinical improvement. **Results:** On admission, the patient was dehydrated, pale, and asthenic, with diffuse abdominal tenderness. Laboratory tests showed persistent leukocytosis with neutrophilia, thrombocytosis, severe inflammatory syndrome (CRP 176 mg/L), hyponatremia, and hypokalemia. Abdominal ultrasonography demonstrated pancolitis. Oral vancomycin, supportive care, and hydroelectrolytic replacement were initiated. Despite treatment, the patient developed persistent fever, bloody diarrhea, worsening inflammatory markers (peak CRP 295.5 mg/L), anemia, and electrolyte imbalance, while repeated microbiological investigations became negative. Because of persistent symptoms and incomplete response to antimicrobial therapy, colonoscopy was performed, revealing diffuse mucosal edema, friability, extensive fibrin-covered ulcerations, and pseudomembranous lesions, suggestive of

concomitant CDI and acute severe UC (Truelove and Witts severity criteria). Mesalazine was initially introduced; however, due to persistent severe disease activity, intravenous methylprednisolone was added, followed by transition to oral methylprednisolone, resulting in rapid clinical and biological improvement. **Conclusions:** This case highlights the diagnostic difficulty of distinguishing infectious colitis from inaugural UC. Early negative *C. difficile* testing associated with markedly elevated fecal calprotectin represented an important clue for underlying inflammatory bowel disease. Prompt endoscopic evaluation and multidisciplinary management were essential for establishing the correct diagnosis and initiating appropriate therapy.

Keywords: *Clostridioides difficile* infection, Ulcerative colitis, Pancolitis

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CLINICAL COURSE AND TREATMENT OF INFECTIVE ENDOCARDITIS

Iulia Diana Sabău[1], Tudor Fleșeriu[1], Anca Meda Văsieșiu[1]

[1] Department of Infectious Diseases, George Emil Palade University of Medicine, Pharmacy, Science and Technology, Târgu Mureș

Background: Infective endocarditis (IE) is a medical—and sometimes surgical—emergency associated with a poor prognosis in the absence of therapeutic intervention. Therapeutic management requires early identification of the etiology, initiation of antibiotic therapy, and evaluation of potential indications for surgical treatment. **Material and methods:** A retrospective, observational study in which data were collected from patients admitted to a county hospital between 2022 and 2026 who were diagnosed with infectious endocarditis. Clinical and biological characteristics, microbiological test results, treatment strategies, and patient outcomes were analyzed. **Results:** Thirty-four patients met the inclusion criteria. The mean age in the cohort was 59.7 years, with a predominance of males (79.4%). The primary clinical manifestation was fever, present in 85.3% of cases. 26.5% of patients had prosthetic heart valves. Blood cultures were positive in 44.1% of cases; the most frequently identified microorganisms were streptococci (11.8%), staphylococci (8.8% MSSA and 5.9% MRSA) and enterococci (3%), as well as Gram-negative bacteria such as *Klebsiella pneumoniae*, *Fusobacterium mortiferum*, and one case of *Listeria monocytogenes*. Antibiotic treatment was initiated according to recommendations, with empirical therapy consisting primarily of third-generation cephalosporins, vancomycin, or oxacillin, and was subsequently scaled back to targeted therapy. The average length of hospital stay was 18.9 days, during which a progressive improvement in inflammatory markers was observed, with a favorable clinical outcome in 88.2% of patients, while in-hospital mortality was 11.8%. Surgical indication was established in 61.8% of patients, the main reasons being severe valvular insufficiency, the presence of vegetations with a high risk of embolism, persistent infection despite antibiotic treatment, and prosthetic valve dysfunction. Embolic complications were identified in 5.9% of cases. **Conclusions:** The treatment of infective endocarditis requires a multidisciplinary approach, based on early and individualized antibiotic therapy, combined with surgical intervention when indicated. In the analyzed cohort, prompt initiation of treatment and careful monitoring of clinical and laboratory progress were associated with a high rate of favorable outcomes and a reduction in inflammatory markers, confirming the importance of prompt and patient-tailored therapeutic management.

Keywords: infective endocarditis, prosthetic valve, antibiotic treatment, blood cultures, inflammatory

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EMERGING TICK-BORNE INFECTIONS IN EUROPE: A ONE HEALTH APPROACH

Violeta Briciu[1]

[1] Department of Infectious Diseases, Iuliu Haţieganu University of Medicine and Pharmacy, Cluj-Napoca

Background: Tick-borne diseases are the most common vector-borne infections in Europe and represent a major public health challenge. Their diagnosis and management require a high index of clinical suspicion, as well as knowledge of the geographical distribution of ticks, pathogens and the associated clinical pictures. **Material and methods:** Among these conditions, human granulocytic anaplasmosis, tick-borne rickettsiosis, tick-borne encephalitis (TBE) and babesiosis are particularly relevant due to their clinical and epidemiological impact. **Results:** Human granulocyte anaplasmosis is caused by *Anaplasma phagocytophilum*, a Gram-negative intracellular bacterium that infects neutrophils. The disease is most commonly manifested by fever, headache, myalgia, arthralgia, leukopenia, thrombocytopenia and increased levels of C-reactive protein and liver transaminases. Severe neurological and respiratory complications are rare, but they can occur, especially in immunocompromised patients. The diagnosis is based on the molecular tests and serology, and the treatment of choice is doxycycline. Tick-borne rickettsiosis is a heterogeneous group of infections caused by different species of *Rickettsia*. The development of molecular techniques has allowed the identification of new pathogenic species and

the description of distinct clinical syndromes that most frequently present as febrile illness associated with eschar, rash, regional lymphadenopathy or, more rarely, severe systemic involvement. Recognition of these syndromic patterns is essential to ensure empirical treatment with doxycycline. Tick-borne encephalitis is a viral infection of the central nervous system caused by the *TBE virus*. The European form follows a biphasic course, with a non-specific viremic phase followed by neurological manifestations such as meningitis, meningoencephalitis or meningoencephalomyelitis. In the absence of a specific antiviral treatment, management is supportive, and vaccination is the most effective method of prevention. Babesiosis is caused by intraerythrocyte protozoa of the genus *Babesia* and can range from asymptomatic infections to severe forms, characterized by hemolysis and multisystem involvement, especially in asplenic or immunocompromised patients. Diagnosis is based on microscopic examination of the smear and molecular methods. Therapy depends on the species of *Babesia* and the severity of the infection (quinine in combination with clindamycin or atovaquone in combination with azithromycin). **Conclusions:** Early recognition, appropriate diagnosis and prompt initiation of treatment are essential to reduce morbidity and mortality associated with tick-borne emerging diseases.

Keywords: tick-borne diseases, anaplasmosis, rickettsiosis, Tick-borne encephalitis, babesiosis

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