

SEPSIS BULLETIN

08 January 2018

Paediatric and Neonatal sepsis

[Between the Devil and the Deep Blue Sea: Use of Real-Time Tools to Identify Children With Severe Sepsis in the Pediatric Emergency Department](#)

Cruz, A. T.

Annals of emergency medicine. December 2017
Volume 70, Issue 6, Pages 769–770

[Improving Recognition of Pediatric Severe Sepsis in the Emergency Department: Contributions of a Vital Sign–Based Electronic Alert and Bedside Clinician Identification](#)

Balamuth, F. et al

Annals of emergency medicine. December 2017
Volume 70, Issue 6, Pages 759–768.e2

Recognition of pediatric sepsis is a key clinical challenge. We evaluate the performance of a sepsis recognition process including an electronic sepsis alert and bedside assessment in a pediatric emergency department (ED).

Adult sepsis (continued)

[Enhancing Recovery From Sepsis: A Review.](#)

Prescott HC, Angus DC.

JAMA. 2018;319(1):62–75.

Current sepsis guidelines do not provide guidance on post-hospital care or recovery. Although there is a paucity of clinical trial evidence to support specific post-discharge rehabilitation treatment, experts recommend referral to physical therapy to improve exercise capacity, strength, and independent completion of activities of daily living. This recommendation is supported by an observational study involving 30 000 sepsis survivors that found that referral to rehabilitation within 90 days was associated with lower risk of 10-year mortality compared with propensity-matched controls.

[Epidemiology and impact on all-cause mortality of sepsis in Norwegian hospitals: A national retrospective study](#)

Knoop, S. T. et al.

POLS One November 17, 2017

Although sepsis is the leading cause of death from infection, there are few population-level epidemiological

[Is procalcitonin to C-reactive protein ratio useful for the detection of late onset neonatal sepsis?](#)

Hahn WH; et al.

The Journal Of Maternal-Fetal & Neonatal Medicine: 2018 Mar; Vol. 31 (6), pp. 822-826. Date of Electronic Publication: 2017 Mar 09.

Procalcitonin (PCT) has been reported as a sensitive marker for neonatal bacterial infections. Recently, small numbers of studies reported usefulness of PCT/C-reactive protein (CRP) ratio in detection of infectious conditions in adults. This study evaluates PCT/CRP ratio in late onset neonatal sepsis. CRP and PCT showed good performance in discrimination between sepsis and healthy controls.

Adult sepsis

[Capillary refill time during fluid resuscitation in patients with sepsis-related hyperlactatemia at the emergency department is related to mortality](#)

Lara, B. et al.

POLS One November 27, 2017

Acute circulatory dysfunction in patients with sepsis can evolve rapidly into a progressive stage associated with high mortality. Early recognition and adequate resuscitation could improve outcome. The aim of this study was to determine the prevalence of abnormal CRT in patients with sepsis-related hyperlactatemia in the early phase after ED admission, and its relationship with outcome.

[Comparison of the Mortality in Emergency Department Sepsis Score, Modified Early Warning Score, Rapid Emergency Medicine Score and Rapid Acute Physiology Score for predicting the outcomes of adult splenic abscess patients in the emergency department](#)

sepsis reports. The impact of sepsis-related deaths on all-cause hospital mortality is insufficiently described, in particular in Europe where data are non-existent. The objective of this study was to provide nationwide epidemiological results on sepsis hospitalizations in Norway and to estimate sepsis' contribution to overall hospital mortality in a European setting.

[Outcomes of Ventilated Patients With Sepsis Who Undergo Interhospital Transfer: A Nationwide Linked Analysis](#)

Rush, B. et al.

Critical Care Medicine. January 2018 - Volume 46 - Issue 1 - p e81–e86

The outcomes of critically ill patients who undergo inter-hospital transfer are not well understood. Physicians assume that patients who undergo inter-hospital transfer will receive more advanced care that may translate into decreased morbidity or mortality relative to a similar patient who is not transferred. However, there is little empirical evidence to support this assumption. Looks at country-level U.S. data from the Nationwide Readmissions Database to determine whether, in mechanically ventilated patients with sepsis, inter-hospital transfer is associated with a mortality benefit.

[Sepsis Survivors Admitted to Skilled Nursing Facilities: Cognitive Impairment, Activities of Daily Living Dependence, and Survival](#)

Ehlenbach, W. et al.

Critical Care Medicine: January 2018 - Volume 46 - Issue 1 - p 37–44

Severe sepsis survivors frequently experience cognitive and physical functional impairment. The degree of impairment and its association with mortality is understudied, particularly among those discharged to a skilled nursing facility. Objective was to quantify the cognitive and physical impairment among severe sepsis survivors discharged to a skilled nursing facility and to

Hung, S-K. et al.

POLS One November 1, 2017

Splenic abscess is rare but has mortality rates as high as 14% even with recent improvements in management. Early and appropriate intervention may improve patient outcomes, yet at present there is no identified method that can predict mortality risk rapidly and accurately for emergency physicians, surgeons, and intensivists to decide on the ideal course of action. This study aims to evaluate the performance of Mortality in Emergency Department Sepsis Score (MEDS), Modified Early Warning Score (MEWS), Rapid Emergency Medicine Score (REMS) and Rapid Acute Physiology Score (RAPS) for predicting the mortality risk of adult splenic abscess patients. This will expedite decision making in the emergency department (ED) to increase survival rates and help avoid unnecessary splenectomies.

[Pediatric Sepsis Endotypes Among Adults With Sepsis](#)

Wong, H. et al.

Critical Care Medicine: December 2017 - Volume 45 - Issue 12 - p e1289–e1291

Recent transcriptomic studies describe two subgroups of adults with sepsis differentiated by a sepsis response signature. The implied biology and related clinical associations are comparable with recently reported pediatric sepsis endotypes, labeled “A” and “B.” Classifies adults with sepsis using the pediatric endotyping strategy and the sepsis response signature and determines how endotype assignment, sepsis response signature membership, and age interact with respect to mortality. Combining the pediatric endotyping strategy with sepsis response signature membership might provide complementary, age-dependent, biological, and prognostic information.

[Mortality Benefit of Recombinant Human Interleukin-1 Receptor Antagonist for Sepsis Varies by Initial Interleukin-1 Receptor Antagonist Plasma Concentration](#)

investigate the relationship between impairment and long-term mortality.

[S1PR3 Signaling Drives Bacterial Killing and Is Required for Survival in Bacterial Sepsis](#)

Hou, JC. Et al

Efficient elimination of pathogenic bacteria is a critical determinant in the outcome of sepsis. Sphingosine-1-phosphate receptor 3 (S1PR3) mediates multiple aspects of the inflammatory response during sepsis, but whether S1PR3 signaling is necessary for eliminating the invading pathogens remains unknown. Investigates the role of S1PR3 in antibacterial immunity during sepsis. Shows that S1PR3 signaling drives bacterial killing and is essential for survival in bacterial sepsis. Interventions targeting S1PR3 signaling could have translational implications for manipulating the innate immune response to combat pathogens.

[Preliminary Performance on the New CMS Sepsis-1 National Quality Measure: Early Insights From the Emergency Quality Network \(E-QUAL\)](#)

Venkatesh, A K. et al

Annals of Emergency Medicine, Jan2018; 71(1): 10-15.e1. 1p.

Describes current hospital-level performance for the Centers for Medicare & Medicaid Services’ Severe Sepsis/Septic Shock Early Management Bundle (SEP-1) quality measure and qualitatively assess emergency department (ED) sepsis quality improvement best practice implementation.

[Is Early Goal-Directed Therapy or Standard Therapy More Effective in Decreasing Mortality Among Patients With Sepsis?](#)

Morton Hamer, M. J. et al

Annals of Emergency Medicine, Jan2018; Volume 71, Issue 1, Pages 37–39

Meyer, N. et al.

Critical Care Medicine: January 2018 - Volume 46 - Issue 1 - p 21–28

Plasma interleukin-1 beta may influence sepsis mortality, yet recombinant human interleukin-1 receptor antagonist did not reduce mortality in randomized trials. The study tested for heterogeneity in the treatment effect of recombinant human interleukin-1 receptor antagonist by baseline plasma interleukin-1 beta or interleukin-1 receptor antagonist concentration.

[New Sepsis Definition \(Sepsis-3\) and Community-acquired Pneumonia Mortality. A Validation and Clinical Decision-Making Study](#)

Ranzani, O. T. et al

American Journal of Respiratory and Critical Care Medicine Vol. 196, No. 10 | Nov 15, 2017

The Sepsis-3 Task Force updated the clinical criteria for sepsis, excluding the need for systemic inflammatory response syndrome (SIRS) criteria. The clinical implications of the proposed flowchart including the quick Sequential (Sepsis-related) Organ Failure Assessment (qSOFA) and SOFA scores are unknown. Performs a clinical decision-making analysis of Sepsis-3 in patients with community-acquired pneumonia.

[Three-Hour Bundle Compliance and Outcomes in Patients With Undiagnosed Severe Sepsis.](#)

Deis, Amanda S. et al

Chest. January 2018 Volume 153, Issue 1, Pages 39–45

The aim of this study was to compare completion of the Surviving Sepsis Campaign 3-hour treatment recommendations and patient-centered outcomes between patients with severe sepsis who received a sepsis-specific diagnosis code with those who did not. Severe sepsis continues to be an underdiagnosed and undertreated condition. Patients who were diagnosed had higher treatment rates yet experienced

Time to antibiotic administration is the main factor explaining mortality differences between sepsis patients treated with early goal-directed therapy versus standard care in recent observational trials. Early goal-directed therapy was associated with increased mortality risk in patients with severe sepsis.

[Effect of Acetaminophen on the Prevention of Acute Kidney Injury in Patients With Sepsis.](#)

Patanwala, A. et al.

Annals of Pharmacotherapy, Jan2018; 52(1): 48-53

Acute kidney injury (AKI) commonly occurs in patients with sepsis. Acetaminophen (APAP) has been shown to inhibit lipid peroxidation and, thus, may be renal protective in patients with sepsis. The objective of this study was to determine the effect of APAP on AKI in patients with sepsis.

[Vitamin C in sepsis.](#)

Kuhn, S et al

Current Opinion in Anaesthesiology. 31(1):55-60, February 2018.

his narrative review summarizes recent insights into the role of vitamin C in sepsis. Septic shock remains a major source of morbidity and mortality in critically ill patients. Although many nutritional supplements have previously been tested unsuccessfully, vitamins are still being explored as a therapeutic option in septic patients. In particular, vitamin C-containing regimens as adjunctive therapy in sepsis have received much attention. In-vitro evidence supports a critical role for vitamin C in cellular mechanisms relevant to the pathophysiology of sepsis. However, whether this justifies therapeutic use of vitamin C in septic patients remains uncertain.

worse outcomes. Continued investigation is needed to identify factors contributing to diagnosis, treatment, and outcomes in patients with severe sepsis.

Need further help? The outreach team at the Bodleian Health Care Libraries is here to support the information needs of all OUH Trust staff.

We're happy to help you with literature searches, search skills training and advice, keeping you up to date, and general references enquiries.

Contact us:

01865 221936

hcl-enquiries@bodleian.ox.ac.uk

www.bodleian.ox.ac.uk/nhs

Register for OpenAthens to access e-resources:

<https://openathens.nice.org.uk/>

Bulletin content based partly on CASH (Current Awareness Service for Health) [here](#)

To subscribe/unsubscribe from this bulletin please click [here](#) or reply to the email.

By signing up to receive this bulletin, you agree that the information provided (your email address and name) will be held on Bodleian Libraries files or databases. You will only be contacted by us in reference to the Sepsis Bulletin. By submitting this information you agree that your details may be used for this purpose. Your details will not be passed on to any third parties.