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SEPSIS BULLETIN

13 May 2019

<p>Neonatal, paediatric and maternal sepsis Body Habitus and Risk of Mortality in Pediatric Sepsis and Septic Shock: A Retrospective Cohort Study Ross PA, et al. J Pediatr. 2019 Apr 26;.</p>	<p>Adult sepsis (cont.) Role of disseminated intravascular coagulation in severe sepsis Gando S, et al. Thromb Res. 2019 Apr 26;178:182-188.</p>
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To investigate the association between body habitus and mortality in critically ill children with sepsis or septic shock. There was no association between body habitus and mortality in critically ill children with sepsis. Children who were overweight and obese were more likely to receive invasive mechanical ventilation and mechanically ventilated survivors who were obese had a longer time to PICU discharge.

[Use of extracorporeal membrane oxygenation and associated outcomes in children hospitalized for sepsis in the United States: A large population-based study](#)

Robb K, et al.

PLoS One. 2019;14(4):e0215730. eCollection 2019.

The American College of Critical Care Medicine recommends that children with persistent fluid, catecholamine, and hormone-resistant septic shock be considered for extracorporeal membrane oxygenation (ECMO) support. Current national estimates of ECMO use in hospitalized children with sepsis are unknown. We sought to examine the use of ECMO in these children and to examine the overall outcomes such as in-hospital mortality, length of stay (LOS), and hospitalization charges (HC). Use of ECMO in children with sepsis is associated with considerable resource utilization but has 59% survival to discharge. Further studies are needed to examine the post discharge and neurocognitive outcomes in survivors.

[Risk Factors for Mortality in Pediatric Postsurgical versus Medical Severe Sepsis](#)

Thakkar RK, et al.

J Surg Res. 2019 May 7;242:100-110.

Sepsis is a leading cause of morbidity and mortality after surgery. Most studies regarding sepsis do not differentiate between patients who have had recent surgery and those without. Few data exist regarding the

Disseminated intravascular coagulation (DIC) associated with multiple organ dysfunction syndrome (MODS) plays pivotal roles in severe sepsis. We performed a multicenter, prospective data collection study and retrospectively analyzed the data to confirm the role of DIC in severe sepsis. The mortality rate of severe sepsis has been improved; however, DIC is still associated with the poor prognosis of these patients. Evaluating the dynamic changes in the DIC status may improve the prediction capability.

[Evaluation of a machine learning algorithm for up to 48-hour advance prediction of sepsis using six vital signs.](#)

Barton C, et al

Comput Biol Med. 2019 Apr 24;109:79-84.

Sepsis remains a costly and prevalent syndrome in hospitals; however, machine learning systems can increase timely sepsis detection using electronic health records. This study validates a gradient boosted ensemble machine learning tool for sepsis detection and prediction, and compares its performance to existing methods. The MLA predicts sepsis up to 48 h in advance and identifies sepsis onset more accurately than commonly used tools, maintaining high performance for sepsis detection when trained and tested on separate datasets.

Bermejo-Martin JF, et al

[Composed endotypes to guide antibiotic discontinuation in sepsis.](#)

Crit Care. 2019 Apr 24;23(1):140.

Overuse of empiric antibiotic therapy in the ICU is responsible for promoting the dissemination of multidrug-resistant (MDR) bacteria. Shortened antibiotic treatment duration could contribute to palliating the emergence of MDR. Uncertainty about patient evolution is a major concern for deciding to

risk factors for poor outcomes in pediatric postsurgical sepsis. Our hypothesis is pediatric postsurgical, and medical patients with severe sepsis have unique risk factors for mortality. Pediatric patients with postsurgical sepsis had different risk factors for mortality compared with medical sepsis. This included a higher mortality risk in postsurgical patients presenting to the intensive care unit from the hospital ward. These data suggest an opportunity to develop and test early warning systems specific to pediatric sepsis in the postsurgical population.

[Maternal sepsis is an evolving challenge](#)

Turner MJ.

Int J Gynaecol Obstet. 2019 Apr 29;

Despite major advances in the last century, particularly in high resource settings, maternal sepsis remains a common and potentially preventable cause of direct maternal death globally. A barrier to further progress has been the lack of consensus on the definition of maternal sepsis. Publications from two recent multidisciplinary consensus conferences, one on sepsis in the non-pregnant adult and the other on sepsis in the pregnant woman, concluded that the criteria for diagnosing sepsis should be clinically based, applicable at the bedside, and should not be laboratory-based. Informed by reviews of the evidence, in 2017 WHO published a new definition of maternal sepsis based on the presence of suspected or confirmed infection. It also announced a Global Maternal and Neonatal Sepsis Initiative to identify the diagnostic criteria for the early identification, epidemiology, and disease classification of maternal sepsis. Standardizing the criteria for maternal sepsis optimizes clinical audit and research. It may facilitate the evaluation of the role of different clinical parameters and biomarkers in the diagnosis, earlier recognition and management of maternal

stop antibiotics. Biomarkers could represent a complementary tool to identify those patients for whom antibiotic treatment could be safely discontinued. The biomarker most extensively studied to guide antibiotic withdrawal is procalcitonin (PCT), but its real impact on decreasing the duration of antibiotic treatment is a matter of controversy. Combining biomarkers to rule out complicated outcomes in sepsis patients could represent a better option. In conclusion, there are a number of promising biomarkers involved in proteolytic, vascular, immunological, and coagulation alterations that could be useful to build composed endotypes to predict uncomplicated outcomes in sepsis. These endotypes could help to identify patients deserving the discontinuation of antibiotics.

[Nighttime and non-business days are not associated with increased risk of in-hospital mortality in patients with severe sepsis in intensive care units in Japan: The JAAM FORECAST study](#)

Matsumura Y, et al.

J Crit Care. 2019 Apr 22;52:97-102.

Hospital services are reduced during off-hour such as nighttime or weekend. Investigations of the off-hour effect on initial management and outcomes in sepsis are very limited. Thus, we tested the hypothesis that patients who were diagnosed with severe sepsis during the nighttime or on non-business days had altered initial management and clinical outcomes. Nighttime and weekends were not associated with increased in-hospital mortality of severe sepsis.

[Opportunities for achieving resuscitation goals during the inter-emergency department transfer of severe sepsis patients by emergency medical services: A case series](#)

infection and sepsis. Further work is required to develop an international consensus on the criteria for diagnosing maternal sepsis and any associated organ dysfunction.

[Thyroid Hormone Profile in Children with Sepsis: Does Euthyroid Sick Syndrome Exist?](#)

Yanni GN, et al.

Open Access Maced J Med Sci. 2019 Apr 15;7(7):1110-1113. eCollection 2019 Apr 15.

Alterations in peripheral thyroid hormone metabolism play an eminent role in the development of the euthyroid sick syndrome. Altered solvation may also lead to changes in peripheral thyroid hormones. Data on thyroid hormones in critically ill children remain unclear. The Euthyroid Sick Syndrome in children with sepsis does exist. There was a significant relationship between T3 and T4 level on day 1 with patient outcome.

[Thiol-disulphide homeostasis is an oxidative stress indicator in critically ill children with sepsis.](#)

Ayar G, et al.

Arch Argent Pediatr. 2019 Jun 1;117(3):143-148.

The aim of this study is to evaluate a novel oxidative stress marker (thiol-disulphide homeostasis) in paediatric sepsis and to determine their effects on the prognosis of sepsis. The paediatric risk of mortality and paediatric logistic organ dysfunction scores of the patients were used to estimate the disease severity. The plasma thiol levels of the patients with sepsis were significantly lower than the control group ($p < 0.001$). This study showed that thiol/disulphide homeostasis is abnormal in children with sepsis in Paediatric Intensive Care Unit.

[Enteral lactoferrin for the treatment of sepsis and necrotizing enterocolitis in neonates](#)

Pammi M, Abrams SA.

Froehlich A, et al.

J Crit Care. 2019 Apr 19;52:163-165.

This study aimed to describe the care provide by Emergency Medical Services (EMS) to severe sepsis patients being transferred between acute care hospitals and identify how that care contributes to sepsis care goals. EMS sepsis care during transfer was limited. EMS crews primarily continued treatments previously initiated and did not take additional steps toward resuscitation targets. Data suggests the inter-emergency department transfer period may provide an opportunity to continue working toward treatment targets, though the time is currently underutilized.

[Current Issues and Perspectives in Patients with Possible Sepsis at Emergency Departments](#)

Charitos IA, et al.

Antibiotics (Basel). 2019 May 7;8(2).

In the area of Emergency Room (ER), many patients present criteria compatible with a SIRS, but only some of them have an associated infection. The new definition of sepsis by the European Society of Intensive Care Medicine and the Society of Critical Care Medicine (2016), revolutionizes precedent criteria, overcoming the concept of SIRS and clearly distinguishing the infection with the patient's physiological response from the symptoms of sepsis. Another fundamental change concerns the recognition method: The use of SOFA (Sequential-Sepsis Related-Organ Failure Assessment Score) as reference score for organ damage assessment. With this in mind, the authors discuss the most important aspects of the sepsis in both adults and infants, and also consider the possible treatment according current guidelines. In addition, the possible role of some nutraceuticals as supportive therapy in septic patient is also discussed.

Cochrane Database Syst Rev. 2019 May 11;5:CD007138. Neonatal sepsis and necrotizing enterocolitis (NEC) cause significant neonatal mortality and morbidity despite appropriate antibiotic therapy. Enhancing host defence and modulating inflammation by using lactoferrin as an adjunct to antibiotics in the treatment of sepsis, NEC, or both, may improve clinical outcomes. The primary objective was to assess safety and efficacy of oral lactoferrin as an adjunct to antibiotics in the treatment of neonates with suspected or confirmed sepsis, NEC, or both. Implications for practice: currently there is no evidence to support or refute the use of enteral lactoferrin, as an adjunct to antibiotic therapy, for the treatment of neonatal sepsis or necrotizing enterocolitis.

Salmonella typhi as cause of neonatal sepsis: case report and literature review.

Sharma D, et al.

J Matern Fetal Neonatal Med. 2019 May 9;:1-4.

Salmonella typhi is a rare cause of neonatal sepsis and can present with life threatening complications, thus leading to increase in neonatal mortality and morbidity. The clinical features of neonatal Salmonella typhi infection are not different to neonatal sepsis caused by other gram-negative organism in this age group. The mode of transmission of neonatal Salmonella typhi is still not known and has been postulated to be both vertical and horizontal. The diagnosis of Salmonella typhi is made by growth of the organism in blood culture as Serum Widal test is not helpful in diagnosis. The management includes supportive care and intravenous antibiotics. We report two neonates who were admitted in our neonatal intensive care unit for neonatal sepsis and were diagnosed of having Salmonella typhi sepsis.

[The value of glycated hemoglobin as predictor of organ dysfunction in patients with sepsis](#)

Lee YS, et al.

PLoS One. 2019;14(5):e0216397. eCollection 2019.

In patients with sepsis, an inflammatory response can lead to destruction of the glycocalyx. These alterations cause the progression of organ dysfunction. Destruction of the glycocalyx can also occur in chronic hyperglycemia. Glycated hemoglobin (HbA1c) is a reliable marker of premorbid hyperglycemia. We investigated the association between HbA1c level at admission and the degree of organ dysfunction progression 72 hours after admission and ICU mortality. In patients with sepsis, the HbA1c level at ICU admission is associated with progression of organ dysfunction 72 hours later and with ICU mortality. It may be important to assess HbA1c level at ICU admission because it may be a predictor of ICU outcome. For patients with a high HbA1c level ($\geq 6.5\%$), greater attention should be paid to the possibility of organ dysfunction progression.

[Application of dynamic pulse pressure and vasopressor tools for predicting outcomes in patients with sepsis in intensive care units.](#)

Fang WF, et al.

J Crit Care. 2019 May 3;52:156-162.

We aimed to determine whether the combination of dynamic pulse pressure and vasopressor (DPV) use is applicable for mortality risk stratification in patients with severe sepsis. We proposed the use of the DPV tool and compared it with traditional sepsis severity indices. The DPV tool can be applied for 7-day and 28-day mortality risk prediction in patients with sepsis.

[How Are Clinicians Treating Children With Sepsis in Emergency Departments in Latin America?: An International Multicenter Survey](#)

Kohn-Loncarica GA, et al.

Pediatr Emerg Care. 2019 May 1;

Guidelines adherence in emergency departments (EDs) relies partly on the availability of resources to improve sepsis care and outcomes. Our objective was to assess the management of pediatric septic shock (PSS) in Latin America's EDs and to determine the impact of treatment coordinated by a pediatric emergency specialist (PEMS) versus nonpediatric emergency specialists (NPEMS) on guidelines adherence. In some Latin American countries, there is variability in self-reported adherence to the evidence-based recommendations for the treatment of PSS during the first hour. The coordination by PEMS support greater adherence to these recommendations.

[Is neutrophil CD11b a special marker for the early diagnosis of sepsis in neonates? A systematic review and meta-analysis](#)

Qiu X, et al.

BMJ Open. 2019 May 1;9(4):e025222.

Our study aimed to synthesise and analyse the early diagnostic value of neutrophil CD11b (nCD11b) for neonatal sepsis. The present evidence indicated that nCD11b is a promising biomarker for the early diagnosis of neonatal sepsis.

Adult sepsis

[Efficacy of dexmedetomidine for treatment of patients with sepsis: A meta-analysis of randomized controlled trials.](#)

Zhang WQ, et al.

Medicine (Baltimore). 2019 May;98(18):e15469.

[Variations in infection sites and mortality rates among patients in intensive care units with severe sepsis and septic shock in Japan](#)

Abe T, et al.

J Intensive Care. 2019;7:28. eCollection 2019.

Accurate and early identification of infection sites might help to drive crucial decisions regarding the treatment of sepsis. We aimed to determine the clinical and etiological features of infection according to sites among patients with severe sepsis in Japan. In-hospital mortality and clinical features of patients with severe sepsis and septic shock were heterogeneous according to sites of infection.

[Heterogeneity of treatment effect by baseline risk of mortality in critically ill patients: re-analysis of three recent sepsis and ARDS randomised controlled trials](#)

Santhakumaran S, et al

Crit Care. 2019 May 3;23(1):156.

Randomised controlled trials (RCTs) enrolling patients with sepsis or acute respiratory distress syndrome (ARDS) generate heterogeneous trial populations. Non-random variation in the treatment effect of an intervention due to differences in the baseline risk of death between patients in a population represents one form of heterogeneity of treatment effect (HTE). We assessed whether HTE in two sepsis and one ARDS RCTs could explain indeterminate trial results and inform future trial design. We assessed HTE in three recent ICU RCTs, using multivariable baseline risk of death models. There was considerable within-trial variation in the baseline risk of death. We observed potential HTE for simvastatin in ARDS, but no evidence of HTE for vasopressin, hydrocortisone or levosimendan in the two sepsis trials. Our findings could be explained either by true lack of HTE (no benefit of vasopressin, hydrocortisone or levosimendan vs comparator for any

This meta-analysis aimed to evaluate the effect of dexmedetomidine on prognosis in patients with sepsis. In patients with sepsis, dexmedetomidine can reduce the short-term mortality of patients, but could not shorten the ICU length of stay and mechanical ventilation time. More clinical randomized controlled trials are needed to verify the efficacy and safety of dexmedetomidine on the length of hospital stay and mechanical ventilation time.

[Diagnosing and Managing Sepsis by Probing the Host Response to Infection: Advances, Opportunities, and Challenges.](#)

Gunsolus IL, et al.

J Clin Microbiol. 2019 May 1;

Sepsis is a major source of mortality and morbidity globally. Accurately diagnosing sepsis remains challenging due to the heterogenous nature of the disease, and delays in diagnosis and intervention contribute to high mortality rates. Measuring the host response to infection enables more rapid diagnosis of sepsis than is possible through direct detection of the causative pathogen, and recent advances in host response diagnostics and prognostics hold promise for improving outcomes. The current review discusses recent advances in the technologies used to probe the host response to infection, particularly those based on transcriptomics. These are discussed in the context of contemporary approaches to diagnosing and prognosing sepsis, and recommendations are made for successful development and validation of host-response technologies.

[Severe meningococcal serogroup W sepsis presenting as myocarditis: A case report and review of literature.](#)

Aung M, et al.

patient subgroups) or by lack of power to detect HTE. Our results require validation using similar trial databases.

[Urinary sepsis after endourological ureterorenoscopy for the treatment of lithiasis.](#)

Díaz Pérez D, et al

Actas Urol Esp. 2019 May 2;

To evaluate the incidence, clinical presentation and factors associated with the development of urinary sepsis after performing ureterorenoscopy. Urinary sepsis is a complication that appears after performing ureterorenoscopy, especially in female patients with a history of urinary sepsis, antibiotic therapy, double J, previous positive urine culture or residual lithiasis after the procedure.

[Seizure comorbidity boosts odds of 30-day readmission after an index hospitalization for sepsis.](#)

Fox J, et al.

Epilepsy Behav. 2019 May 2;95:148-153.

The objective of this study was to evaluate the association between comorbid seizures and hospital readmissions within 30 days following an index hospitalization for sepsis. Seizures are not uncommon, and patients with sepsis and comorbid seizures are 30% more likely to be readmitted within 30-days postdischarge, compared to those with sepsis and no comorbid seizures.

[Alleviating Sepsis-Induced Neuromuscular Dysfunction Linked With Acetylcholine Receptors by Agrin](#)

Lv B, et al.

J Surg Res. 2019 May 2;241:308-316.

Abnormal expression and distribution of nicotinic acetylcholine receptors (nAChRs) in skeletal muscle caused by sepsis can lead to neuromuscular

J Intensive Care Soc. 2019 May;20(2):182-186. Epub 2018 Sep 10.

The global incidence of invasive meningococcal disease due to serogroup W (MenW) has risen over the last decade. The following case emphasises the atypical features of MenW meningococcaemia, which included myocarditis, a rare but important complication. It also highlights the potential novel role that cardiac magnetic resonance imaging can provide in the diagnosis of MenW myocarditis. Complications of these infections can be avoided with early recognition and susceptibility testing to prevent the use of inappropriate antibiotics and treatment failure.

[Evaluation of MR-proANP and copeptin for sepsis diagnosis after burn injury](#)

Gille J, et al.

J Crit Care. 2019 Apr 30;52:149-155.

The significance of the validated biomarkers of sepsis Mid-regional pro-atrial natriuretic peptide (MR-proANP) and copeptin have not been tested in a burn injury setting. Burn injury itself maybe associated with copeptin and to a lesser degree MR-proANP level increases. Subsequent increases in MR-proANP may be considered diagnostic for sepsis but demonstrated no advantages over PCT. The role of copeptin remains inappropriate for diagnosing sepsis after burn injury

[Targeting nitric oxide as a key modulator of sepsis, arthritis and pain](#)

Spiller F, et al.

Nitric Oxide. 2019 Apr 30;89:32-40.

Nitric oxide (NO) is produced by enzymatic activity of neuronal (nNOS), endothelial (eNOS), and inducible nitric oxide synthase (iNOS) and modulates a broad spectrum of physiological and pathophysiological conditions. The iNOS isoform is positively regulated at

dysfunction. Here, we asked whether neural agrin regulates nAChRs to ameliorate muscle function, which could be associated with the agrin/muscle-specific kinase pathway. The decreased expression of agrin may lead to skeletal muscle dysfunction. Early enhancement of intramuscular agrin levels after sepsis may be a potential strategy for the treatment of sepsis-induced muscle dysfunction.

[A strategy to identify paramedic transported sepsis cases in an Emergency Department administrative database](#)

Lane DJ, et al.

Prehosp Emerg Care. 2019 May 2;:1-11.

To evaluate a new strategy for identifying sepsis in Emergency Department (ED) patients that combines administrative diagnosis codes with clinical information from the point of first contact. Incorporation of a broader range of diagnostic codes and linking to an electronic database to obtain initial clinical information for the assessment of organ dysfunction improves reliability, criterion, and construct validity for identifying sepsis in ED patients.

[Circulating cell death biomarker TRAIL is associated with increased organ dysfunction in sepsis](#)

Schenck EJ et al.

JCI Insight. 2019 May 2;4(9). eCollection 2019 May 2.

In sepsis, there may be dysregulation in programmed cell death pathways, typified by apoptosis and necroptosis. Programmed cell death pathways may contribute to variability in the immune response. TRAIL is a potent inducer of apoptosis. Receptor-interacting serine/threonine protein kinase-3 (RIPK3) is integral to the execution of necroptosis. We explored whether plasma TRAIL levels were associated with in-hospital mortality, organ dysfunction, and septic shock. We also

transcriptional level and produces high levels of NO in response to inflammatory mediators and/or to pattern recognition receptor signaling, such as Toll-like receptors. In this review, we compiled the main contributions of our group for understanding of the role of NO in sepsis and arthritis outcome and the peripheral contributions of NO to inflammatory pain development. Although neutrophil iNOS-derived NO is necessary for bacterial killing, systemic production of high levels of NO impairs neutrophil migration to infections through inhibiting neutrophil adhesion on microcirculation and their locomotion. Moreover, neutrophil-derived NO contributes to multiple organ dysfunction in sepsis. In arthritis, NO is chief for bacterial clearance in staphylococcal-induced arthritis; however, it contributes to articular damage and bone mass degradation. NO produced in inflammatory sites also downmodulates pain. The mechanism involved in analgesic effect and inhibition of neutrophil migration is dependent on the activation of the classical sGC/cGMP/PKG pathway. Despite the increasing number of studies performed after the identification of NO as an endothelium-derived relaxing factor, the underlying mechanisms of NO in inflammatory diseases remain unclear.

[Prognostic accuracy of the serum lactate level, the SOFA score and the qSOFA score for mortality among adults with Sepsis](#)

Liu Z, et al.

Scand J Trauma Resusc Emerg Med. 2019 Apr 30;27(1):51.

Sepsis is a common critical condition caused by the body's overwhelming response to certain infective agents. Many biomarkers, including the serum lactate level, have been used for sepsis diagnosis and guiding treatment. Recently, the Third International Consensus Definitions for Sepsis and Septic Shock (Sepsis-3)

explored the relationship between TRAIL and RIPK3. Lower levels of TRAIL were associated with septic shock and organ dysfunction in 3 independent ICU cohorts. TRAIL was inversely associated with RIPK3 in all cohorts.

[Heparin-like Effect Associated With Risk of Bleeding, Sepsis, and Death in Patients With Severe Alcohol-associated Hepatitis](#)

Premkumar M, et al.

Clin Gastroenterol Hepatol. 2019 May 8

Endogenous heparinoids or heparin-like effects (HLEs) can cause coagulation failure in patients with cirrhosis and sepsis. We performed a prospective study of the association between HLE and bleeding events, sepsis, and outcomes of patients with severe alcohol-associated hepatitis. In a prospective study of patients with severe alcohol-associated hepatitis, we associated HLE with coagulation abnormalities, risk of sepsis, and mortality.

[The Value of Quick Sepsis-Related Organ Failure Assessment Scores in Patients With Acute Pancreatitis Who Present to Emergency Departments: A Three-Year Cohort Study.](#)

Hallac A, et al.

Gastroenterology Res 2019 Apr;12(2):67-71. Epub 2019 Apr 7.

Distinguishing sepsis from other inflammatory syndromes continues to be a clinical challenge. The goal of risk stratification tools is to differentiate sepsis from other conditions. We compare the ability of quick sepsis-related organ failure assessment (qSOFA) and systemic inflammatory responses syndrome (SIRS) scores to predict prolonged length of stay (LOS) among patients who presented to the emergency department and hospital ward with acute pancreatitis (AP). The qSOFA is a tool designed to identify patients at high risk

recommended the Sequential Organ Failure Assessment (SOFA) and the quick SOFA (qSOFA) rather than lactate for screening sepsis and assess prognosis. Here, we aim to explore and compare the prognostic accuracy of the lactate level, the SOFA score and the qSOFA score for mortality in septic patients using the public Medical Information Mart for Intensive Care III database (MIMIC III). Lactate is an independent prognostic predictor of mortality for patients with sepsis. It has superior discriminative power to qSOFA, and shows discriminative ability similar to that of SOFA.

[Circulating Biologically Active Adrenomedullin Predicts Organ Failure and Mortality in Sepsis.](#)

Kim H, et al.

Ann Lab Med. 2019 Sep;39(5):454-463.

Sepsis is a life-threatening organ dysfunction caused by a dysregulated host response to infection. Biologically active adrenomedullin (bio-ADM) is an emerging biomarker for sepsis. We explored whether bio-ADM concentration could predict severity, organ failure, and 30-day mortality in septic patients. Bio-ADM could serve as a useful and objective biomarker to predict severity, organ failure, and 30-day mortality in septic patients.

[Clinical- vs. model-based selection of patients suspected of sepsis for direct-from-blood rapid diagnostics in the emergency department: a retrospective study.](#)

Ward L, et al.

Eur J Clin Microbiol Infect Dis. 2019 May 11;.

Selecting high-risk patients may improve the cost-effectiveness of rapid diagnostics. Our objective was to assess whether model-based selection or clinical selection is better for selecting high-risk patients with a high rate of bacteremia and/or DNAemia. The model outperformed clinicians in selecting patients with a high rate of bacteremia. Using such a model for risk

of mortality due to sepsis. The data suggest that as with sepsis, patients with AP who are triaged with only qSOFA could be underrecognized and subsequently undertreated. Secondly, the data suggest that SIRS scoring has the potential to promptly predict how long patients with AP will stay in the hospital.

[Statins improve the long-term prognosis in patients who have survived sepsis: A nationwide cohort study in Taiwan \(STROBE complaint\)](#)

Hu SY, et al.

Medicine (Baltimore). 2019 Apr;98(17):e15253.

Most patients diagnosed with sepsis died during their first episode, with the long-term survival rate upon post-sepsis discharge being low. Major adverse cardiovascular events and recurrent infections were regarded as the major causes of death. No definite medications had proven to be effective in improving the long-term prognosis. We aimed to examine the benefits of statins on the long-term prognosis of patients who had survived sepsis. Statins may have the potential to decrease the long-term mortality of patients who have survived sepsis. However, more evidence, including clinical and laboratory data, is necessary in order to confirm the results of this observational cohort study.

[Plasma interleukin-6 concentration for the diagnosis of sepsis in critically ill adults.](#)

Molano Franco D, et al.

Cochrane Database Syst Rev. 2019 Apr 30;4:CD011811.

The definition of sepsis has evolved over time, along with the clinical and scientific knowledge behind it. For years, sepsis was defined as a systemic inflammatory response syndrome (SIRS) in the presence of a documented or suspected infection. At present, sepsis is defined as a life-threatening organ dysfunction

stratification may contribute towards closing the gap in cost between rapid and culture-based diagnostics.

[Association between Statin Use and Sepsis Risk in Patients with Dementia: A Retrospective Cohort Study.](#)

Yeh LT, et al.

Int J Environ Res Public Health. 2019 May 9;16(9).

This study investigated the association of statin use with sepsis risk in patients with dementia. This retrospective cohort study was conducted in Taiwan by using data from the National Health Insurance Research Database. We identified and enrolled 308 patients with newly diagnosed dementia who used statin after dementia diagnosis. In conclusion, our analysis showed no positive association of sepsis with statin use in patients with dementia.

[Performance of a new combination of blood culture vials in sepsis detection: a 2-year retrospective comparison](#)

Bottino P, et al.

Eur J Clin Microbiol Infect Dis. 2019 May 8;.

The diagnosis of bloodstream infection requires the optimum combination of media in an automated blood culture system for maximum recovery of pathogens with the earliest time to detection. In a previous work, we showed that for patients admitted to the Emergency Department of our hospital, the combination of BACTEC lytic anaerobic and BACTEC aerobic vials was more efficient than BACTEC anaerobic and BACTEC aerobic vial. In this study, we extended the work including a broader patient population, representative of all hospital. This study carried out on a long time observation reported that a simple modification of composition of blood culture set could lead to better results in bloodstream infection detection.

resulting from a dysregulated host response to infection. Even though sepsis is one of the leading causes of mortality in critically ill patients, and the World Health Organization (WHO) recognizes it as a healthcare priority, it still lacks an accurate diagnostic test. Determining the accuracy of interleukin-6 (IL-6) concentrations in plasma, which is proposed as a new biomarker for the diagnosis of sepsis, might be helpful to provide adequate and timely management of critically ill patients, and thus reduce the morbidity and mortality associated with this condition. Our evidence assessment of plasma interleukin-6 concentrations for the diagnosis of sepsis in critically ill adults reveals several limitations. High heterogeneity of collected evidence regarding the main diagnosis, setting, country, positivity threshold, sepsis criteria, year of publication, and the origin of infection, among other factors, along with the potential number of misclassifications, remain significant constraints for its implementation. The 20 conference proceedings assessed as studies awaiting classification may alter the conclusions of the review once they are fully published and evaluated. Further studies about the accuracy of interleukin-6 for the diagnosis of sepsis in adults that apply rigorous methodology for conducting diagnostic test accuracy studies are needed. The conclusions of the review will likely change once the 20 studies pending publication are fully published and included.

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