



SEPSIS BULLETIN

13 September 2018

World Sepsis Day

Neonatal, paediatric and maternal sepsis

[Association between the New York sepsis care mandate and in-hospital mortality for pediatric sepsis.](#)

Evans I.V.R. et al.

JAMA July 24/31 2018

The death of a pediatric patient with sepsis motivated New York to mandate statewide sepsis treatment in 2013. The mandate included a 1-hour bundle of blood cultures, broad-spectrum antibiotics, and a 20-mL/kg intravenous fluid bolus. Whether completing the bundle elements within 1 hour improves outcomes is unclear. The study looks to determine the risk-adjusted association between completing the 1-hour pediatric sepsis bundle and individual bundle elements with in-hospital mortality. IT found that in New York State following a mandate for sepsis care, completion of a sepsis bundle within 1 hour compared with not completing the 1-hour sepsis bundle within 1 hour was associated with lower risk-adjusted in-hospital mortality among patients with pediatric sepsis and septic shock.

[Hospital postnatal discharge and sepsis advice: perspectives of women and midwifery students.](#)

Haith-Cooper M.

British Journal of Midwifery 2018;26(4):248-253.

Women are discharged home from hospital increasingly early, but there is little evidence examining the postnatal hospital discharge process and how this may impact on the health of women and babies. In particular, there is little on sepsis prevention advice, despite it being the biggest direct cause of maternal

Adult sepsis (cont.)

[Examining the relationship between sepsis and oropharyngeal dysphagia in hospitalised elderly patients: a retrospective cohort study](#)

Sasegbon A,

Frontline Gastroenterology 2018;9:256-261.

Elderly people are recognised to be at increased risk of oropharyngeal dysphagia (OPD), the causes of which are multifactorial. Our aim was to identify if sepsis is associated with OPD in the elderly during hospitalisation in the absence of known other risk factors for OPD. Conclusion: The prevalence of sepsis and subsequent dysphagia is significant and should be taken into account in any elderly person in hospital with new-onset OPD without other predisposing risk factors.

[Importance of Markers of Sepsis in Surgical Patients.](#)

Smolár, Marek; Dedinská, Ivana; Hošala, Michal; Mazúch, Július; Laca, L'udovit

The American surgeon; Jun 2018; vol. 84 (no. 6); p. 1058-1063

Sepsis, severe sepsis, and septic shock represent a serious medicinal and general social problem and still maintain an important position among the present issues in the basic and clinical research. In the prospective analysis of patients satisfying the criteria of septic condition, we determined serum levels of bioparameters in three consecutive days from the first signs of sepsis depending on the stage or advancement of the septic condition. We determined the most significant parameter/parameters which are able to

mortality. Study explores the perceptions of women and senior student midwives related to the postnatal hospital discharge process and maternal sepsis prevention advice. Cost effective, time-efficient and innovative ways to impart vital information are required to support the postnatal hospital discharge process.

[Prophylactic lactoferrin for preventing late-onset sepsis and necrotizing enterocolitis in preterm infants: A PRISMA-compliant systematic review and meta-analysis](#)

He, Yi; Cao, Luying; Yu, Jialin

Medicine; Aug 2018; vol. 97 (no. 35); p. e11976

Currently, prophylactic use of drugs to promote a healthy gut microbiota and immune system in preterm infants is hot debated, among which lactoferrin is a promising supplementation. However, the effect and safety of lactoferrin to prevent late-onset sepsis (LOS) and necrotizing enterocolitis (NEC) in preterm infants remains controversial. Current evidence indicates that lactoferrin could significantly reduce the incidence of NEC and LOS, and decrease the risk of hospital-acquired infection and infection-related mortality in premature infants without obvious adverse effects.

[Pediatric Sepsis: A Primer for the Pediatrician.](#)

Conway, Edward E

Pediatric annals; Jul 2018; vol. 47 (no. 7); p. e292

Sepsis is the body's systemic response to infection and is a serious health care concern that affects neonatal, pediatric, and adult populations worldwide. Severe sepsis (sepsis that has progressed to cellular dysfunction and organ damage or evidence of hypoperfusion) and septic shock (sepsis with persistent hypotension despite adequate fluid resuscitation) are still associated with high mortality rates despite improvements in the management of infectious processes. The cellular processes that occur as a result of the inflammatory response in sepsis, including impaired perfusion and microcirculatory coagulation, can lead to organ system dysfunction. Early recognition of sepsis can help prompt treatment to improve patient care. Current pediatric guidelines emphasize early recognition, aggressive fluid resuscitation, and administration of antibiotics within the first hour for a better outcome. The practitioner needs to always be mindful of the possibility of sepsis when examining a patient with potential symptoms.

Adult sepsis

[Corticosteroid therapy for sepsis: a clinical practice guideline.](#)

determine the stage of sepsis or to predict patient's death. Our results show that the monitored parameters (procalcitonin, C-reactive protein, tumor necrosis factor- α , and interleukin 6) have strong correlations between the serum levels and the stage of disease. Examination of at least one cytokine in normal clinical practice might lead to better interpretation of the patient's condition, determining the risk of death.

[Advancing quality in sepsis management: a large-scale programme for improving sepsis recognition and management in the North West region of England](#)

Nsutebu EF. et al

Postgraduate Medical Journal 2018;94:463-468.

Evaluates the impact of a collaborative programme for the early recognition and management of patients admitted with sepsis in the northwest of England. Describes a quality improvement programme (Advancing Quality (AQ) Sepsis) that promoted a sepsis care bundle including time-based recording of early warning scores, documenting systemic inflammatory response syndrome criteria and suspected source of infection, taking of blood cultures, measuring serum lactate levels, administration of intravenous antibiotics, administration of oxygen, fluid resuscitation, measurement of fluid balance and senior review. Concludes that the AQ Sepsis collaborative in northwest of England improved readmission and length of stay for patients admitted with sepsis but did not affect mortality. Further cost-effectiveness evaluation of the programme is needed.

[Optimised dosing of vancomycin in critically ill Indigenous Australian patients with severe sepsis.](#)

Tsai, D; Stewart, P C; Hewagama, S; Krishnaswamy, S; Wallis, S C et al.

Anaesthesia and intensive care; Jul 2018; vol. 46 (no. 4); p. 374-380

Vancomycin is a commonly used antibiotic due to the high burden of methicillin-resistant *Staphylococcus aureus* infections. This study aimed to describe the pharmacokinetics (PK) of vancomycin in Australian. PK differences were observed in comparison to published data. Therapeutic loading doses were significantly dependent on both weight and CrCL, whereas maintenance doses were dependent on CrCL. In the absence of severe renal impairment, initiation of maintenance dose eight hours post-loading dose achieved higher probability of target attainment at 24 hours. This is the first report of vancomycin PK in this patient group.

[Are large randomised controlled trials in severe sepsis](#)

Lamontagne F.

BMJ 2018;362:k3284.

Do corticosteroids reduce death or improve recovery in people with sepsis or septic shock? Our panel make a weak recommendation to give corticosteroids to people with all types and severity of sepsis, based on new evidence. Because we are not certain that they are beneficial, it is also reasonable not to prescribe them. Patients' values and preferences may guide this decision-making process. This rapid recommendation was triggered by two trials, with differing conclusions whose results might change practice:

- ADRENAL (3658 patients who had septic shock) found no statistically significant difference in 90 day mortality between the hydrocortisone and placebo groups.
- APROCCHSS (1241 patients who had septic shock) found that hydrocortisone plus fludrocortisone reduced 90 day mortality.

[Could some commonly used drugs improve survival from sepsis?](#)

NHS Behind the Headlines June 19 2018

"Common drugs may stop sepsis, say doctors," reports the Times. This is a simplistic take on a complex laboratory study that aimed to better understand why children and adults respond differently to sepsis infection, and that tried to identify potential new drug therapies to treat sepsis. Sepsis is a rare but serious complication of infection and without quick treatment, it can lead to multiple organ failure and death. If caught early, sepsis can be treated using antibiotics. However, as the researchers note, there is a difference in how children and adults respond to sepsis – generally, children are more likely to survive it. The researchers wanted to better understand this "childhood resistance" and use that knowledge to try to identify possible drug therapies.

[Assessment of Sepsis-3 criteria and quick SOFA in patients with cirrhosis and bacterial infections](#)

Piano, S. et al

Gut 2018;67:1892-1899

Patients with cirrhosis have a high risk of sepsis, which confers a poor prognosis. The systemic inflammatory response syndrome (SIRS) criteria have several limitations in cirrhosis. Recently, new criteria for sepsis (Sepsis-3) have been suggested in the general population (increase of Sequential Organ Failure Assessment (SOFA) ≥ 2 points from baseline). Outside the intensive care unit (ICU), the quick SOFA (qSOFA (at least two among alteration in mental status, systolic blood pressure ≤ 100 mm Hg or respiratory rate

[and septic shock statistically disadvantaged by repeated inadvertent underestimates of required sample size?](#)

Wong JLC , et al

BMJ Open 2018;8:e020068

We sought to understand why randomised controlled trials in septic shock have failed to demonstrate effectiveness in the face of improving overall outcomes for patients and seemingly promising results of early phase trials of interventions. We performed a retrospective analysis of large critical care trials of severe sepsis and septic shock. Data were collected from the primary trial manuscripts, prepublished statistical plans or by direct communication with corresponding authors. An interpretation of our results is that trials are consistently underpowered in the planning phase by employing erroneous variables to calculate a satisfactory sample size. Our analysis cannot establish if, given a larger sample size, a trial would have had a positive result. It is disappointing so many promising phase II results have not translated into durable phase III outcomes. It is possible that our current framework has biased us towards discounting potentially life-saving treatments.

[Effects of Early Exercise Rehabilitation on Functional Recovery in Patients with Severe Sepsis.](#)

Ahn, J.Y. et al.

Yonsei medical journal; Sep 2018; vol. 59 (no. 7); p. 843-851

Severe sepsis is associated with functional disability among patients surviving an acute phase of infection. Efforts to improve functional impairment are important. We assessed the effects of early exercise rehabilitation on functional outcomes in patients with severe sepsis. Early physical rehabilitation may improve functional recovery at hospital discharge, especially in patients with high initial severity scores.

[The effects of statin therapy on mortality in patients with sepsis: A meta-analysis of randomized trials.](#)

Chen, Mengyan; Ji, Mingxia; Si, Xiaoshui

Medicine; Aug 2018; vol. 97 (no. 31); p. e11578

Much controversy persists regarding the role of statins therapy in patients with sepsis. This systematic review and meta-analysis of randomized trials aimed to evaluate the clinical efficacy of statin therapy on mortality from sepsis. This systematic review and meta-analysis of randomized trials indicates that statin therapy has no effect on mortality outcomes in patients with sepsis compared with placebo.

≥22/min)) was suggested to screen for sepsis. These criteria have never been evaluated in patients with cirrhosis. The aim of the study was to assess the ability of Sepsis-3 criteria in predicting in-hospital mortality in patients with cirrhosis and bacterial/fungal infections.

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