Summer 8-2-2017

Sepsis

Sarah Jones
sjones1@otterbein.edu

Follow this and additional works at: https://digitalcommons.otterbein.edu/stu_msn

Part of the Critical Care Nursing Commons, and the Pathological Conditions, Signs and Symptoms Commons

Recommended Citation
https://digitalcommons.otterbein.edu/stu_msn/243

This Project is brought to you for free and open access by the Student Research & Creative Work at Digital Commons @ Otterbein. It has been accepted for inclusion in Nursing Student Class Projects (Formerly MSN) by an authorized administrator of Digital Commons @ Otterbein. For more information, please contact digitalcommons07@otterbein.edu.
Sepsis in the Adult Population
Sarah Jones BSN, RN
Otterbein University, Westerville, Ohio

Introduction to Sepsis

Pathophysiology

Vaughn & Patry (2014), explain that when the body’s response exceeds that by infection increasing metabolic rates. There is an abrupt shift of the body fluid which causes an oxygenated response leading to cardiovasculation, capillary leakage and a state of distributive shock. The body during this inflammatory state, platelet cells become activated due to changes in the level of microorganisms which stimulate phagocytes. Primarily responsible for the development of shock. When the body is unable to maintain a steady balance of inflammation, a more severe response occurs. The body attempts to further compensate by initiating an anti-inflammatory response, which results in hypothermia and hypotension. This process further progresses to the activation of leukocytes, which in turn produce another proinflammatory response. Once inflammation becomes less severe, the hypothermia and hypotension occur due to vasodilation, capillary leakage, dilation endothelial injury and microvascular thrombi, resulting in organ dysfunction (Taen, et al., 2017).

Recognizing Sepsis

According to Miller (2014), a patient with a temperature greater than 100.4°F (38°C) or less than 96°F, average heart rate greater than ninety beats per minute, a respiratory rate greater than twenty breaths per minute, and a white blood cell count higher than 12,000, are signs that indicate possible sepsis. If a patient meets two of the above criteria, a sepsis work-up is done to determine if sepsis has been initiated promptly as time is critical to improving outcomes.

Sepsis is more likely to occur in the elderly population because of the increase in comorbidities and chronic diseases (Bermejo-Martín, Andaluz-Ojeda, Almansa, Gomis, Gomez-Herreras, Gomez-Sanchez, 2016).

Other elderly patients, patients in a hyper-responsive and upon activation may more readily aggregate with or bind to platelets, leukocytes, and endothelial cells. This binding results in amplified inflammatory and thrombotic responses in sepsis, potentially contributing to an excess risk of organ failure, disability, and death (Rudina, et. al, 2015, pp 226).

Significance of Pathophysiology and Treatment

Several studies have been done and continue to be conducted that aim to better understand the inflammatory and immune response (LaGauer, 2013). A lactate level greater than two is cause for concern monitoring and prompt treatment (Singer, Taylor, Leblanc, Williams, & Thode 2014).

• WBC count, absolute neutrophil count,
• A lactate level greater than two is cause for concern monitoring and prompt treatment.


To be achieved within 3 hours of identification of sepsis:

• Blood culture sampling before antibiotics
• Antibiotic administration
• Fluid resuscitation 30 ml/kg of crystalloids or lactate 4 ml/kg/liter.

Nursing Implications


References


