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### Sepsis: Early Identification of Sepsis

Natasha Asante

Otterbein University, [asante1@otterbein.edu](mailto:asante1@otterbein.edu)

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# Sepsis: Early Identification of Sepsis

Natasha Asante BSN, RN

Otterbein University, Westerville, Ohio

## Introduction of Sepsis Signs and Symptoms

- Sepsis is a life-threatening response to infection that can lead to tissue ischemia, organ failure and death (Borrelli et al.).
  - Sepsis arises when the body's response to any infection injures its own tissues and organs (world health organization, 2020).
  - Sepsis can be caused by any pathogenic microbe and may arise from pneumonia, urinary tract infection and infection in the skin and soft tissue (Nagalingam, 2018).
  - Sepsis can affect anyone, but some individuals may be at a higher risk. These include individuals with chronic illness, the very young or old, individuals who had recent surgery and the immunocompromised (Nagalingam, 2018).
- It is hard to determine the signs and symptoms of sepsis sometimes because they vary and can be subtle in some patients (Nagalingam, 2018).
  - Increased Respiratory rate, hypotension, fever, leukocytosis and tachycardia are some indications of sepsis.
  - As sepsis progresses, the clinical signs and symptoms include cold or clammy skin, reduced urine output, lactic acidosis and altered mental status (Nagalingam, 2018).

## Time

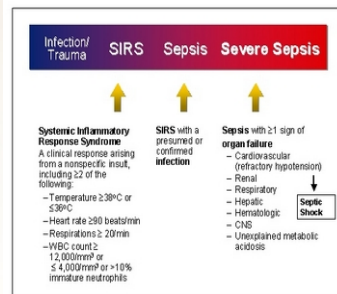
- A mnemonic that helps with the identification of the most important signs of sepsis
- T is for temperature that is higher or lower than usual.
- I is for signs of infection.
- M is for mental status... has it changed?
- E is for extreme pain.
- Retrieved above information from Sepsis Alliance (2018).

Retrieved image from:

Sepsis Awareness Campaign (2010).

## Stages of Sepsis

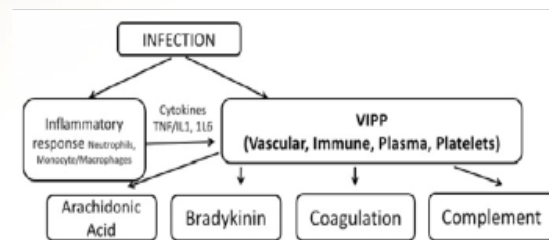
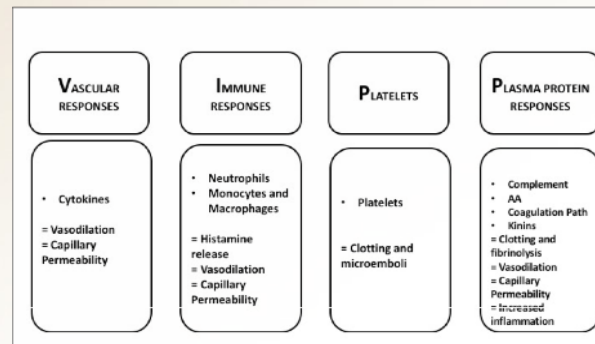
- There are 3 stages of sepsis. Systemic inflammatory response syndrome (SIRS), severe sepsis and septic shock.
- SIRS is characterized by a low or high body temperature, high heart rate, high respiratory rate, high or low white blood count and a known or suspected infection.
- Severe sepsis is diagnosed when acute organ dysfunction begins along side with hypotension or hypoperfusion. Decreased urine output, sudden changes in mental state, decreased platelet count, shortness of breath and abdominal pain are symptoms of organ dysfunction.
- Septic shock is characterized by the presence of hypotension induced by sepsis despite fluid resuscitation.
- Retrieved above information from (RYDING, 2018)



## Pathophysiology of Sepsis

When an infection occurs, an inflammatory response occurs which involves the complex process that sets off a cascade of reactions that involves the immune system and the coagulation cascade. Inflammation involves the release of mediator molecules, causing vasodilation and capillary permeability. This enables the infiltration of neutrophils and monocytes, fibrinogen and platelets into the area. (Nagalingam, 2018).

During sepsis, the normal inflammatory response becomes excessive, the acute inflammatory response prompts the release of various cytokines. These cytokines signals for more help by activating other chemical inflammatory mediators that are derived from plasma or within the cells. The mediators then sets off a cascade that will create and continue the inflammatory response (ladha et al., 2019)



Retrieved both images from Ladha et al., 2019

## Significance of pathophysiology

Understanding the pathophysiology of sepsis is a critical step in managing sepsis. Someone dies of sepsis every 3-4 seconds (newsbank, 2017). It is important for nurses to understand sepsis and identify sepsis on time as patient's survival depends on the early identification and prompt initiation of treatment. Organ damage is imminent as sepsis progresses. Understanding the pathophysiology with prompt initiation of treatment will prevent any further or permanent organ damage. Mortality of sepsis increases by 8% every hour that treatment is delayed. About 80% of sepsis deaths could be prevented with rapid diagnosis and treatment (newsbank, 2017). Understanding the pathophysiology of sepsis helps with the improvement of sepsis treatment.

## Implication for Nursing Care

Nurses play a vital role in caring for sepsis patients. It is important for nurses to understand sepsis to be able to recognize

sepsis in a timely manner.

It is very essential for nurses to familiarize themselves on the best evidence-based practices done to improve the treatment of sepsis. Nurses being able to identify and control the source of infection plays a very critical role on the outcome of sepsis patients. The role of the nurse is fundamental throughout the patient care process in an area of great collaboration with various professional roles (Bertoncini et al., 2016). Sepsis is deadly and must be treated early and aggressively. Its pathophysiology directly impacts the patient's clinical presentation. Being cognizant of sepsis pathophysiology can prompt early recognition of sepsis (Ladha et al., 2019).

## Conclusion

Sepsis is a common diagnosis with a high mortality rate and is a leading cause of in hospital deaths (Ladha et al., 2019). Sepsis is a major health problem, it is the most expensive health condition to treat (chou et al., 2020). Sepsis increases in severity as it progresses from SIRS, sepsis, septic shock and multiple organ dysfunction syndrome (Ladha et al., 2019). Sepsis is a medical emergency and time is an important factor in managing sepsis. Early identification and prompt treatment impacts the morbidity and mortality rates of septic patients.

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