Sepsis Assessment

Sepsis is a systemic infection that may trigger a systemic inflammatory response syndrome (SIRS) in the body in response to toxins. The initiating event may result from an infection, major surgery, trauma, burns, or acute pancreatitis. Common symptoms include a fever, hypotension from systemic vasodilation, an increase or decrease in white blood cell count, change in LOC, tachycardia, and tachypnea. Some patients may also present with significant edema due to fluid shift, along with elevated blood glucose levels. Factors placing the patient at increased risk for developing this condition include increased aged, immunosuppressed individuals, and prolonged hospitalization.

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Signs and Symptoms

Systemic Infectious Process
Spreading Infection
Sepsis is characterized by a systemic bacterial or fungal infection which causes a system wide inflammatory response. A common cause of sepsis is indwelling catheters in older adult patients, which can progress from a pyelonephritis to a systemic bacteremia.

Fever
Fever-beaver
Fever, possibly accompanied by shaking chills, is one of the common and first symptoms to present. It typically involves a temperature above 100.4 degrees F (38 degrees C). If the WBC count is low, hypothermia can occur in some patients, which is defined as a temperature below 97 degrees F (36 degrees C).

Hypotension
Hippo-BP
Sepsis results in systemic vasodilation, which leads to low blood pressure and decreased systemic vascular resistance. This systemic vasodilation will often cause the patient’s skin to feel warm and red. Patients may also have slightly decreased urine output in early stages.

Change in LOC
Delta Halo
Patients who are septic often present with confusion as an early sign and also delirium in later stages. It is imperative to assess mental status of patients at risk for developing sepsis as early detection and treatment may prevent progression to shock.

Increased WBC
Up-arrow White-mac-man
Increases in white blood cell count, specifically neutrophils of more than 10000 often occurs early in patients with sepsis. This substantial increase in white blood cell count is a direct result of the body’s response to infection. In severe sepsis patients may encounter a low WBC.

Shift to the Left
Shifting board to the Left
A shift to the left is a classic finding in sepsis patients or any patient experiencing a severe acute infection. As neutrophils mature they start out as bands and then become “segs” or segmented neutrophils, which are capable of fighting infection. In sepsis the immature “bands” are released into circulation too early causing a disproportionate increase in immature “bands” called a left shift.

Tachycardia
Tac-heart-card
Increased oxygen demands by tissues will cause an increased heart rate as the body attempts to maintain cardiac output. Sustained tachycardia leads to high output heart failure in sepsis patients.

Tachypnea

Tac-P-lungs

Increased respiratory rate, typically greater than 20 breaths per minute, is seen as a compensatory attempt to increase oxygenation in the blood paired with the increased cardiac output.

Hyperglycemia

Hiker-glue-bottle

In septic patients, it is recommended to start insulin dosing when 2 consecutive blood glucose levels are >180 mg/dL in patients without diabetes and is believed to be the result of severe stress put on the body by systemic infection.

Edema

Edamame

Peripheral vasodilation may cause edema in many patients due to capillary leakage. This capillary leakage also causes warm red skin and increased fluids in tissues.