

Sepsis Solutions

Clinical Education

Facts about Sepsis

- Worldwide incidence of sepsis is estimated to be 19 million cases per year.¹
- Between 28-50% of people diagnosed with sepsis die.²
- Most expensive condition treated in U.S. hospitals, costing \$20 billion in 2011 and increase on average annually by 11.9%.³
- Mortality from sepsis increases 8% for every hour that treatment is delayed. As many as 80% of sepsis deaths could be prevented with rapid diagnosis and treatment.⁴
- 80% of patients diagnosed with sepsis developed the condition outside the hospital.⁵

What is Sepsis?

Sepsis is a life-threatening illness caused when the body's response to an infection damages its own tissues and organs. Sepsis can be broken down into three core stages:

- 1. Sepsis:** chemicals of the immune system reach the bloodstream and cause inflammation throughout the body
- 2. Severe Sepsis:** infection disrupts blood flow to the brain or kidneys, leading to organ failure
- 3. Septic Shock:** patient's blood pressure drops significantly causing respiratory, heart, or organ failure which could result in mortality⁶

Current Common Practice

Sepsis must be treated as an emergency. Aggressive fluid resuscitation must be performed to restore tissue perfusion in order to prevent organ dysfunction.

- **Within 3 Hours:** aggressive fluid resuscitation by administering antibiotics and intravenous fluids to the patient, approximately 30mL/kg
- **Within 6 Hours:** In the case of blood pressure remaining low despite initial fluid resuscitation, central venous pressure and central venous oxygen saturation should be measured
- **Within 12 Hours:** essential to diagnose or exclude any source of infection

Fluid Overload

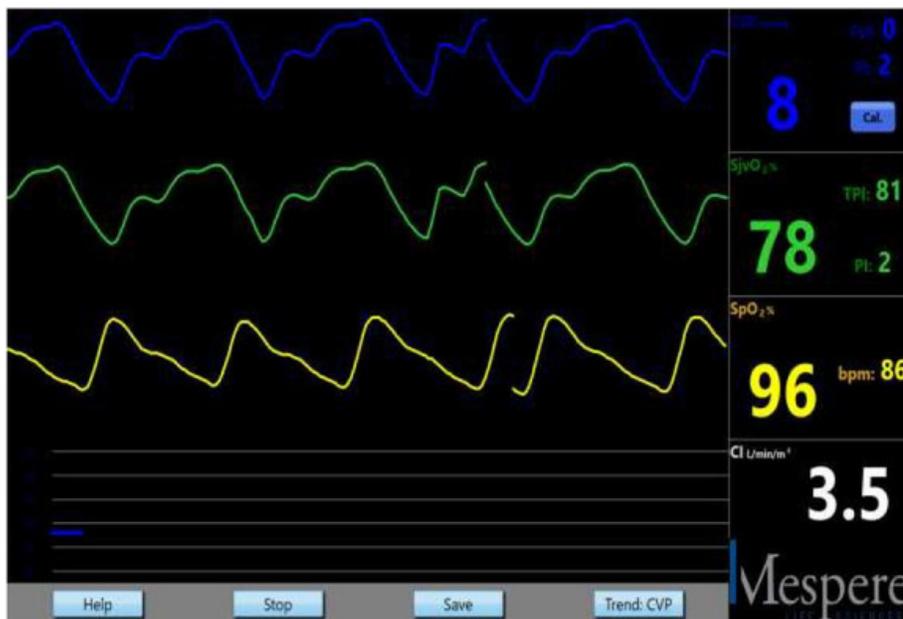
If too much fluid is administered, then fluid overload can occur and cause further complications. Clinical studies have shown that fluid overload can lead to hypertension, peripheral edema, pulmonary edema, respiratory failure, and increased cardiac demand.^{4,7,8}

Mespere LifeSciences Solution

Mespere LifeSciences introduces the first-ever monitoring systems that use near infrared spectroscopy to accurately measure venous hemodynamics without the need for invasive catheterization. Our innovative and cost-effective solutions can be used to ensure that patients are receiving the appropriate fluids in a timely manner.

VENUS 2000 CVP - Mespere LifeSciences VENUS 2000 CVP is a non-invasive and continuous central venous pressure (CVP) monitoring system. With the use of our product, healthcare professionals can now easily and efficiently monitor fluid levels during resuscitation to avoid overload.

VO 100 Jugular Venous Oximetry - Mespere LifeSciences VO 100 Jugular Venous Oximetry is a non-invasive and continuous monitoring system for jugular venous oxygen saturation (SjvO₂). Our product allows healthcare workers to monitor the effectiveness of fluid resuscitation for tissue re-perfusion and make sure that the appropriate treatment is being provided to the patient.



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