
TITLE LOREM IPSUM

SIT DOLOR AMET



sepsis and septic shock



SEPSIS AND SEPTIC SHOCK

- Mortality has been estimated to be ≥ 10 percent and ≥ 40 percent when shock is present

IMMEDIATE EVALUATION AND MANAGEMENT

- Securing the airway and correcting hypoxemia
- establishing venous access for the **early** administration of fluids and antibiotics are priorities in the management of patients with sepsis and septic shock

STABILIZE RESPIRATION

- Supplemental oxygen **should be supplied to all patients** with sepsis who have indications for oxygenation, and oxygenation should be monitored continuously with pulse oximetry.
- Ideal target values for peripheral **saturation** are unknown, but we typically target values between **90 and 96** percent.
- Intubation and mechanical ventilation may be required to support the increased **work of breathing** that frequently accompanies sepsis or for airway protection since encephalopathy and a depressed level of consciousness frequently complicate sepsis

ESTABLISH VENOUS ACCESS

- Venous access should be established as soon as possible in patients with suspected sepsis.
- While **peripheral venous** or intraosseous access may be sufficient in some patients, particularly for **initial resuscitation**
- the majority will require central venous access at some point during their course.
- However, the insertion of a central line should not delay the administration of resuscitative fluids and antibiotics

INITIAL RESUSCITATIVE THERAPY

- The **cornerstone** of initial resuscitation is :
- the rapid restoration of **perfusion** and
- the early administration of **antibiotics**.

INTRAVENOUS FLUIDS (FIRST THREE HOURS)

- Intravascular hypovolemia is typical and may be severe in sepsis.
- **Rapid**, **large volume** infusions of IVF (**30 mL/kg**) are indicated as initial therapy for severe sepsis or septic shock
- unless there is convincing evidence of significant pulmonary edema

CHOICE OF FLUID

- Evidence from randomized trials and meta-analyses have found:
- **No difference** between using albumin solutions and crystalloid solutions (eg, **Ringer's lactate**, **normal saline**) in the treatment of sepsis or septic shock
- There is no role for hypertonic saline

PATIENTS WHO FAIL INITIAL THERAPY


- Patients having persistent hypoperfusion despite adequate fluid resuscitation and antimicrobial treatment should be :
- reassessed for fluid responsiveness ('Hemodynamic') adequacy of the antimicrobial regimen and septic focus control

VASOPRESSORS


- Intravenous **vasopressors** are useful in patients who remain **hypotensive** despite adequate fluid resuscitation or who develop cardiogenic **pulmonary edema**.
- A **paradigm shift** in practice has occurred such that most experts prefer to avoid dopamine in this population and favor norepinephrine as the first-choice agent


Vasoactive agents in septic shock

Drug	Effect on heart rate	Effect on contractility	Arterial constriction effects
Dobutamine	+	+++	- (dilates)
Dopamine	++	++	++
Epinephrine	+++	+++	++
Norepinephrine	++	++	+++
Phenylephrine	0	0	+++

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- However, we believe the **initial choice** of vasopressor in patients with sepsis is often **individualized** and determined by additional factors including :
 - the presence of coexistent conditions contributing shock (eg, heart failure), arrhythmias, organ ischemia, or agent availability

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- For example,
 - in patients with significant tachycardia (eg, fast atrial fibrillation, sinus tachycardia >160/minute), agents that completely lack beta adrenergic effects (eg, vasopressin) may be preferred if it is believed that worsening tachycardia may prompt further decompensation.
 - Similarly, dopamine (DA) may be acceptable in those with significant bradycardia; but low dose DA should **not** be used for the purposes of "renal protection."

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- The impact of agent availability was highlighted by one study of nearly 28,000 patients from 26 hospitals, which reported that during periods of norepinephrine shortages, phenylephrine was the most frequent alternative agent chosen by intensivists

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- Additional agents :
 - The addition of a second or third agent to norepinephrine may be required (eg, epinephrine, dobutamine, or vasopressin).

- For patients with refractory septic shock associated with a low cardiac output :
- addition of an inotropic agent may be useful.
- In a retrospective series of 234 patients with septic shock, among several vasopressor agents added to norepinephrine(dobutamine, dopamine, phenylephrine, vasopressin), inotropic support with dobutamine was associated with a survival advantage