

Emergency Department Adult Sepsis Protocol

Triage and Initial Screening Criteria

1. Identification of a potentially septic patient

- CTAS level = 2 (CTAS = 1 if patient is hemodynamically compromised)

AND

- Known or suspected infection AND two or more of the following:
 - Temperature greater than 38°C or less than 36°C
 - Heart rate greater than 90 per minute
 - Respiratory rate greater than 20 per minute
 - Systolic blood pressure less than 90

2. Initial management

- Notify ED Attending immediately
- Determine Code Status and proceed accordingly
- Initiate large bore IV access and administer 20-30 ml/kg Normal Saline over 30 minutes (use fluid warmer if patient is hypothermic)
- Send CBC, BUN, creatinine, venous blood gas (this automatically includes lactate, electrolytes, and glucose) PT/PTT, urinalysis, blood cultures x 2.
- Consider chest x-ray
- Supplemental oxygen titrated to SPO₂ 90% or higher
- Monitor intake and output. If an indwelling catheter is indicated, use a temperature sensing catheter.

3. For clinical presentations strongly suggestive of sepsis, the ED Attending may initiate Early Goal Directed Therapy immediately (see #4 below). Otherwise, reassess the patient after 30 minutes. If any one of the following is present after fluid administration, the patient rules in for **Severe Sepsis and/or Septic Shock**.

- Systolic blood pressure less than 90 or MAP less than 65
- SpO₂ less than 91% on room air or requires mechanical ventilation
- Urine output less than 0.5 ml/kg/hr
- WBC less than 4,000 or greater than 12,000
- Lactate greater than 4

4. If patient rules in for **Severe Sepsis and/or Septic Shock**:

- Notify ED Attending immediately
- Notify Charge Nurse to:
 - Activate the ED STAT Team
 - Page
 - Critical Care MD or ARNP - pager 2419
 - Respiratory Care - pager 9374
- Initiate Early Goal Directed Therapy with the Adult Critical Care sepsis order packet:
 - Early Goal Directed Resuscitation Orders

- Critical Care Sepsis Orders (Adults) Fast-track Antibiotics (Goal = antibiotics within 60 minutes of the diagnosis of sepsis)
 - Adult ICU ARDS/ALI Protective Ventilation Orders
 - Consider repeating the serum lactate if the initial level was elevated and the specimen was not drawn under optimal conditions.
 - Start second peripheral line if central venous access is not imminent
 - Prepare to insert a central line for central venous pressure (CVP) monitoring. Note that pre-existing long-term central venous access devices can be transduced for initial CVP monitoring as long as they do not have a valve at the tip (i.e. Groshong catheters).
5. Key components of Early Goal Directed Therapy (EGDT):
- Measure serum lactate.
 - Obtain blood cultures prior to antibiotic administration. (**urine and urine cx needed as well**)
 - Administer broad-spectrum antibiotics within 1 hour of diagnosis of septic shock or severe sepsis
 - In the event of hypotension and/or a serum lactate level greater than 2 mmol/L, deliver an initial minimum of 20 mL/kg of crystalloid or an equivalent.
 - In the event of hypotension and/or serum lactate greater than 2 mmol/L, apply vasopressors (norepinephrine or dopamine) for hypotension that does not respond to initial fluid resuscitation to maintain mean arterial pressure (MAP) greater than 65 mmHg.
 - In the event of persistent hypotension despite fluid resuscitation and/or lactate greater than 4 mmol/L, achieve a central venous pressure (CVP) of 8 - 12 mmHg.
 - In the event of persistent hypotension despite fluid resuscitation and/or lactate greater than 4 mmol/L, achieve a central venous oxygen saturation (ScvO₂) of at least 70%.
 - Physiologic Goals
 - Urine output greater than 0.5 ml/kg/hr
 - MAP greater than 65 mmHg
 - CVP 8-12 mmHg
 - Serum lactate 4 mmol/L or less
 - ScvO₂ of at least 70%

References:

- Dellinger, R. P., Carlet, J. M., Masure, H., Gerlach, H., Calandra, T., Cohen, J., et al. (2004). Surviving Sepsis Campaign guidelines for management of severe sepsis and septic shock. *Critical Care Medicine*, 32, 858-873.
- Dellinger, R.P, Levy, M.M., Carlet, J.M, Bion, J., Parker, M.M., Jaeschke, R., et al. (2008). Surviving sepsis campaign: International guidelines for management of severe sepsis and septic shock: 2008. *Critical Care Medicine*, 36(1), 296-327.
- Frakes, M.A. (2007). Emergency department management of severe sepsis. *Advanced Emergency Nursing Journal*, 29, 228-238.
- Gilboy, N., & Tanabe, P. (2006). Can different types of central venous catheters be used to measure central venous pressure in an emergency situation? *Advanced Emergency Nursing Journal*, 28, 269-274.

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