PRACTICE ALERT
SEVERE SEPSIS-INITIAL RECOGNITION AND RESCUSCITATION

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INTRODUCTION

Severe sepsis is a major healthcare problem that affects millions of people around the world each year with extremely high mortality rate of 30-60 %. Mortality from sepsis is greater that breast cancer, lung cancer, and colon cancer combined and is the number one cause of death in non-coronary ICU. The incidence of severe sepsis is expected to double over the next 25-30 years.

The reasons for increasing incidence are the following

1) Increased use of invasive devices such as intra vascular catheters
2) Widespread use of cytotoxic and immunosuppressive therapies for cancer and transplantation
3) Increased life span of patients with cancer and diabetes who are prone to develop sepsis
4) Increase in infection due to antibiotic resistant organism.

EXPECTED PRACTICES

- Assess all patients and immediately notify physician when patient presents with clinical findings suggestive of sepsis

Clinical findings for severe sepsis include

- Documentation of suspected infection AND
- 2 or more the following systemic inflammatory response syndrome (SIRS) criteria

- Heart rate >90 beats per minute
- Temperature <36C (96.8F) or >38.3C (101F)
- Respiratory rate >20/minute or PaCO2 < 32mm of Hg
- White blood cell count <=12,000mm3 or a left shift in the immaturation of granulocyte (Bands)>10%
- At least one of the following indicators of tissue hypo perfusion or sepsis related acute organ dysfunction

- Acute altered mental status
- Systolic blood pressure <90 mm of Hg or mean arterial pressure <70 mm of Hg or a systolic blood pressure decrease of 40 mm of hg
- Blood glucose > 140 mg/dl in patients without Diabetes
- Arterial Hypoxemia (PaO2/FiO2<300)
- Acute oliguria (<0.5mi/kg/hr for at least for 2 hrs)
- Creatinine increase>0.5 mg/dl above baseline
- Coagulation abnormalities (INR> 1.5 or a PTT > 60 sec)
- Ileus
- Thrombocytopenia (Platelet count, 100,000 microL-1
- Hyperbilirubinemia (Plasma total bilirubin>2mg.bl) Lactate >4mmol/L
- Obtain serum lactate measurements. Hyperlactatemia is defined as lactic acid level>4 mmol/l
- Obtain blood culture as well as cultures from potential sites of infection prior to initiating broad spectrum antibiotics. Blood cultures should be drawn prior to initiation of antibiotic therapy and within one hour of sepsis diagnosis
- Evaluate and remove potential source of infection eg infected invasive devices
- Maintain the following therapeutic endpoints during resuscitation; mean arterial pressure at > 65 mm of Hg, Central venous pressure (CVP) 8-12 mm of Hg and central venous and mixed venous oxygen saturation >70 %.
- Administer fluids to attain a CVP of 8-12 mm of Hg or >= 12 mm of Hg if on ventilator
- Administer vasopressors if necessary to achieve a mean arterial pressure of 65 mm of Hg if fluid replacement is not successful
- If venous oxygen saturation goal not attained consider additional fluids, blood transfusion and /or dobutamine administration
- Maintain blood glucose levels <150 mg/dl

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