Special Populations:
The patient with suspected Sepsis

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Learning outcomes

On completion of this module the participants will be able to:

- Appreciate the importance of early recognition and management of sepsis to patient outcomes
- Outline strategies to recognise and manage sepsis
- Examine treatment modalities, patient outcome measures and clinical indicators for sepsis
- Analyse the CIN role in detecting and responding to clinical deterioration of a patient with sepsis in the waiting room.
Facts on sepsis and septic shock

- Life threatening conditions
- Recognition may be difficult
- Early recognition and management has a significant impact on morbidity and mortality.
- Estimated mortality rate in ICU is 27.6%
  - Reference: ARISE 2007
- Presently the average time to antibiotics in ED is 4.45 hours.
- Sepsis and septic shock is the No 1 reason for initiating a MET/PACE call in the deteriorating patient
  - Reference: NSW Agency for Clinical Innovation and Clinical Excellence Commission

CEC website has information about the sepsis project and pathway
Is Your Patient SEPTIC?

Steps 1 & 2 to recognising sepsis

1. High risk group
   - Is the patient in a high risk group
   - Aged over 70 years
   - Immunosuppressed
   - Chronic medical condition

2. History and examination
   - Does your patient have a source of infection?

Patients may display subtle or non specific signs of sepsis, they may look well

If the patient looks unwell or you are worried.........................
..........................THINK SEPSIS.
Step 3 to recognising sepsis

Check vital signs for early & late warning signs

<table>
<thead>
<tr>
<th>EARLY WARNING SIGNS</th>
<th>LATE WARNING SIGNS</th>
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</thead>
<tbody>
<tr>
<td>Respirations / min: &lt; 10 or &gt; 25</td>
<td>Respirations / min: &lt; 5 or &gt; 30</td>
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<tr>
<td>Sp02: &lt; 95%</td>
<td>Sp02: &lt; 90%</td>
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<tr>
<td>Temperature: &lt; 35.50°C or &gt; 38.50°C</td>
<td>Pulse / min: &lt; 40 or &gt; 140</td>
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<tr>
<td>Pulse / min: &lt; 50 or &gt; 120</td>
<td>Systolic blood pressure mmHg (SBP): &lt; 90</td>
</tr>
<tr>
<td>Systolic blood pressure mmHg (SBP): &lt; 100</td>
<td>Temperature: &lt; 35.50°C or &gt; 38.50°C</td>
</tr>
<tr>
<td>Altered mental state or drowsiness</td>
<td>Altered mental state or drowsiness</td>
</tr>
</tbody>
</table>
Is your patient in a high risk group with vital signs in the Yellow Zone

This patient has severe sepsis until proven otherwise

This patient’s care must be escalated immediately to the most senior medical officer
Response and escalation

- The next important step for the CIN is to respond to the identified critically ill patient or potential for clinical deterioration.
- Time sensitive: Recognise & escalate within 5 minutes
- This involves escalation to a senior medical officer
  - Patients with possible severe sepsis are transferred to the resuscitation area or equivalent immediately
  - Do not manage this patient in the waiting room
  - Patients with mild/moderate sepsis need
    - Septic work-up
    - Empirical antibiotics within 1 hour
    - Close monitoring and reassessment
Ongoing management
Mild / Moderate sepsis

• Septic work-up (locate the source infection)
  – Serum lactate level to identify severe sepsis
    • If 4mmol/L or greater treat as Severe Sepsis: Escalate to senior medical officer
  – Blood cultures, FBC, LFT, Coagulation & Glucose, venous blood gas
  – Urine and sputum culture
  – Cultures from indwelling vascular access devices
  – Chest x-ray

• Intravenous line & intravenous fluids

• Empirical antibiotics within 1 hour

• Monitoring
  – Intake and output chart
  – Vital signs
Septic patients often present as hypothermic with normal or low white blood cell counts.

**Recognising the potential for infection in the absence of fever and elevated white blood cell count and intervening appropriately are imperative in the treatment and prevention of worsening sepsis**
Reassessment

• Closely monitor this patient if in the waiting room. Observations should include
  – MAP as well as blood pressure
  – Pulse, respiratory rate, oxygen saturation
  – Temperature, level of consciousness

• Monitor for signs of improvement
  – MAP > 65mmHg, Urine output
  – Oxygen saturation remains above 95%.

• Minimum requirement for patient monitoring is hourly or more frequently as dictated by the patient’s condition.
Reassessment

- Maintain a strict fluid balance
- Communicate regularly with the ED clinical team
- Prioritise this patient for the next available bedspace
- Inform the patient of what their anticipated emergency journey
- Inform the patient who to contact if they feel unwell or need assistance
Key points for the CIN role

- Sepsis and septic shock are life threatening condition
- Early recognition and treatment of sepsis in the undifferentiated patient has a significant impact on patient outcome
- Signs of sepsis are subtle and non specific
  - Patient may be hypothermic
  - Patient may have a normal or low white cell count
- Know the high risk groups
  - Aged over 70 years
  - Immunosuppression
  - Infants and young children
  - Chronic condition
Key points for the CIN role

- Recognising sepsis involves the following
  - Identify possible source of infection
  - Look for signs of systemic inflammatory response syndrome (SIRS)
    - Alterations in respiratory rate, oxygen saturation, heart rate and temperature
  - Assess for hypoperfusion which is evidence by
    - hypotension or elevated serum lactate level
- Respond and escalate when there is an identified potential for deterioration in a patient
- Sepsis management is time sensitive with time to first antibiotic 1 hour
QUESTIONS
References

- Powerpoint presentation titled ‘Sepsis’
- Kumar, A et al Duration of hypotension before initiation of effective antimicrobial therapy is the critical determinant of survival in human septic shock. Critical Care Med 2006 Vol 34 No 6 1589-1596.
- Hicks P Cooper, D (on behalf of the ANZICS Board and ANZICS Clinical Trials Committee) The Surviving Sepsis Campaign: International Guidelines for management of severe sepsis and septic shock. 2008 and the Australian and New Zealand Intensive Care Society, Critical Care and Resuscitation, Volume 10 Number 1 March 2008 6-8.

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