RAH ED Sepsis Protocol

Does you patient have evidence of sepsis?
Temp >38 or Clinical evidence of infection (UTI, pneumonia, intra-abdominal,etc)
AND
Are you going to prescribe iv antibitotics?

YES

NO
Treat as normal

Antiobiotic choice should be as per RAH policy

If lactate is unavailable, a base excess of -4 or greater may be used as a surrogate marker

Apply Sepsis Bundle
Blood culture
Diagnosis to iv antibiotic time <1 hour
Perform VBG or ABG and send sample to ITU for LACTATE

Does patient have ANY of the following?
Systolic BP<90 (no inotropes) at ANY time
Lactate > 4 mmol/l
>40% Oxygen to achieve O2 sats>90%

If answer if **YES** to ANY of these then
Diagnosis is **Severe Sepsis** or **Septic Shock**
Patient should be moved to Resus
Involve A&E senior/consultant and ITU SHO

If all answers are **NO** then treat as normal

Resuscitation Bundle 1 - Circulatory
Insert CVP - target 8-12mmHg - use for SvO2
Insert arterial line
Mean Arterial pressure > 65 mmHg - once target CVP reached, use vasopressors

Assess response - Central venous sats, lactate / base excess, urine output

Resuscitation bundle 2 - Oxygen Delivery
If Central venous sats still < 70% or lactate / BE not improving
Tranfuse to Hb > 9g/dl (10 g/dl for patients with CV disease)
Consider dobutamine infusion to increase cardiac output

Patients should be managed in a high dependency area (HDU / ITU)
Consider need for further organ support

Resuscitation goals

CVP 8-12 mmHg
Mean arterial pressure > 65mmHg
Urine output > 1ml/kg/hour
Central venous sats > 70%
Hb > 10g/dl
Arterial PaO2 > 9kPa

1st line vasopressor is norarenaline (see seperate sheet)

Blood taken from central line and processed as a venous blood gas is an approximation for SvO2

Beware falsely elevated SvO2 in late sepsis

Resuscitate patients with 250-500ml boluses of Hartmanns

Consider use of sliding scale insulin for hyperglycaemia

References

Surviving Sepsis website - www.survivingsepsis.org
Rivers E et al: EGDT in the treatment of severe sepsis and septic shock. New Eng J Med 1001; 345: 1368-1377
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SEPSIS 6

The Scottish Patient Safety Programme has chosen Sepsis management as a major initiative to improve patient care. The key components of this are:

1. The early identification of patients with Sepsis
2. Completion of the **Sepsis 6** care bundle within 1 hour

We are now piloting the **Sepsis 6** care bundle at the Southern General Hospital in the medical block and including CDU (ward 6). Early treatment of sepsis using the **Sepsis 6** care bundle has been shown to save lives. We are aim to complete all 6 items within 1 hour of a patient being identified with sepsis. This will require nursing and medical staff in these areas to work together.

The **Sepsis 6** Bundle

1. Oxygen titrated to achieve saturation 94-98%. If known CO_2 retainer, aim for 88-92%
2. IV Fluids Resuscitation, ≥ 500mls in first hour or 20ml/kg if shocked (125ml/hr if non-severe)
3. Blood cultures prior to antibiotics
4. Intravenous antibiotic as per local guideline
5. Measure serum lactate with Full Blood Count
6. Measure urine output & consider catheter

How Sepsis 6 will work in practise:

Nurses

- Call Doctor to review any patient with a ***new*** NEWS score of ≥5 **and** has suspected infection OR suspected sepsis OR suspected infection in immunocompromised.
- Place **Sepsis 6** sticker (shown below) in case notes and write the name of Doctor who has been called, and the time and date on the sticker.
- Stickers are available in folders in ward 20 and in the 'Sepsis 6' file found in the medical ward duty rooms.
- Each time a sticker is used, place a patient identification sticker in the folder
- Start monitoring of urine output

Doctors

- Review patient promptly (within 30 minutes)
- Confirm Sepsis (2 or more SIRS Criteria + suspected infection) and assess severity
- Complete the Sepsis 6 using the sticker as a prompt
- Review response to treatment after one hour and if necessary arrange senior review
- Lactate is sent in a grey bottle to the labs. Antibiotic guideline posters are found displayed on every ward and available in the Therapeutics handbook and on Staffnet.

October 24th 2012 Dr Abigail Belsham and Dr Andrew Kernohan

Original document attributed to: David Bell, Craig Harrow, Scott Muir, Simon Patten and Gerry Wright

Severity Criteria

- SBP < 90 mm Hg or MAP < 65 or SBP ↓ by 40mm Hg from baseline
- Lactate > 2
- New organ dysfunction (see below)
- New altered mental state
- Risk of neutropenic sepsis; Suspected/proven immunosuppression.

Signs of new organ dysfunction:

- O2 needed to keep sats >90%;
- U.Output <0.5ml/kg/hr for 2 hrs;
- Creatinine >177 µmol/L or Bilirubin >34µmol/L or INR >1.5 or APTT >60 s or Platelets <100 x 10^9/L

Sepsis 6 sticker

SEPSIS 6 Time and date of NEWS ≥5______________________

Name of Doctor Called ___________________________

Aim to complete Sepsis 6 Care Bundle within 1 hour in patients identified with NEWS ≥ 5 or 2+ SIRS criteria, AND suspected infection → SEPSIS **or** suspected infection in immunocompromised

SIRS Criteria: Tick all that apply

- Respiratory Rate > 20 ☐ Heart Rate > 90 bpm ☐
- WCC < 4 or > 12 ☐ Temperature <36 or >38°C ☐

Sepsis 6 Care Bundle (complete in 1 hour) Tick once initiated

1. Oxygen titrated to achieve saturation 94-98% ☐
   If patient is known CO_2 retainer aim for 88-92%
2. IV Fluids, ≥ 500mls in first hour or 20ml/kg if shocked ☐
   (125 ml/hr if non-severe sepsis)
3. Blood cultures and sepsis screen prior to antibiotics ☐
4. Intravenous antibiotic as per local guideline ☐
5. Measure serum lactate with Full Blood Count ☐
6. Measure urine output & consider catheter ☐

Continuing care

- Review 1 hour after initiation of sepsis 6 ☐
- Senior review (CT1 and above) if severe sepsis or concern ☐
- Consider if referral to Consultant or Critical care is required ☐

Finally

We are not expecting to be able to complete the Sepsis 6 in all patients within an hour as soon as we start this. There will be teething problems so please feedback any difficulties you have or any ideas on how we can do it better to abigail.belsham@nhs.net. Many thanks for all your help.

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