Critical Care Station 3

9 minutes with up to 1 minute for feedback

You are the SHO on ward cover over night, and you are called by the FY1 to see a patient that she is worried about. The patient had a right hemicolectomy with primary anastamosis seven days previously, and has had an otherwise uneventful recovery but began vomiting earlier in the day. The observation chart and fluid balance chart for this patient is attached.

Review these charts, and you will be asked a series of questions on this scenario.

Sepsis Station

What are your concerns when reviewing the observation and fluid charts of this patient?

- Temperature
- Developing tachycardia
- Becoming hypotensive
- Reduced urine output
- Inadequate fluid resuscitation – both in view of replacing NG/vomit losses, and hypotension.
- Delayed intervention by the FY1

What term describes the physiological state of this patient?

- Sepsis / septic shock

What is your differential diagnosis?

- Anastamotic leak with faecal peritonitis
- Intra-abdominal collection
- Other source of infection less likely to present so severely septic so quickly

The nurse informs you that the patient is complaining of severe abdominal pain. How would you manage the patient?

- ABC approach
- Take a history from the patient - ?pain etc.
- Examine the patient – palpate abdomen, auscultation chest, inspect wound and for indwelling IV lines
- Investigations
    - full set of bloods – FBC, U+E, CRP, blood cultures, troponin
    - +/- for CT abdomen/pelvis for anastamotic leak / collection
- Act to stabilise the patient:
    - Fluid resuscitation – colloid initially
    - Urinary catheterisation
    - Empirical antibiotics if likely source of infection once blood cultures taken
- SIMULTANOUSLY to resuscitation:
    - Recognition that the patient needs to go to theatre as an emergency:
        - Book case on emergency list
        - Speak to registrar/consultant surgeon
        - Speak to anaesthetist
        - Ensure the patient gets prepped for theatre

Despite fluid resuscitation the urinary output remains low. What are the causes of acute renal failure?

- Pre-renal: hypotension, low cardiac output
- Renal: parenchymal damage e.g. acute tubular necrosis, glomerulonephritis
- Post-renal: obstructive causes e.g. stones, strictures, blocked catheter

Where should this patient be managed, and what additional monitoring should be instituted?

- This patient needs to be transferred to an HDU or ITU for more intensive management.
- Additional monitoring:
  - Urinary catheter if not already placed
  - Central venous access to monitor accurately the response to fluid challenges
  - Arterial line possibly to monitor pressure, and allow easy access to arterial blood for ABG analysis

In the acute phase, what are the indications for renal replacement therapy?

- Refractory hyperkalaemia >6 mmol/L
- Metabolic acidosis with pH < 7.2
- Fluid overload and pulmonary oedema
- Symptomatic uraemia >30 mmol/L

How would you define 'shock'?

- Lack of perfusion of end organs, usually caused by cardiovascular collapse

What is the systemic inflammatory response syndrome (SIRS)?

- Describes the systemic reaction of the body to critical illness, and is defined as 2 or more of the following criteria:
  - Temperature >38 or <36
  - Heart rate >90 beats/min
  - Respiratory rate >20/min or $PaCO_2$ <4.3kPa
  - WCC >12 or <4 $x10^9/L$

Define sepsis and septic shock?

- Sepsis = SIRS with clinical evidence of an infection
- Septic shock = Sepsis with *hypotension* (systolic <90mmHg) which is *refractory to fluid replacement*.

Overall impression of the candidate Please encircle your mark

FAIL **BORDERLINE FAIL** **BORDERLINE PASS** **PASS**

If you have any specific comments about this candidate please write them in the box.