Guidelines and guidance

A systematic approach to the acutely ill patient (ABCDE approach)

Contents

Underlying principles

1. Use a systematic approach, based on airway, breathing and circulation (i.e., the ABCDEs) to assess and treat the acutely ill patient.
2. Undertake a complete initial assessment and re-assess regularly
3. Always assess the effects of treatment or other interventions.
4. Always correct life-threatening abnormalities before moving on to the next part of assessment.
5. Recognise the circumstances when additional help is required and ask for it early.
6. Use all members of the multidisciplinary team.
7. Communicate effectively.
8. The underlying aim of the initial interventions should be seen as a “holding measure” that keeps the patient alive, and produces some clinical improvement, in order that definitive treatment may be initiated.
9. Remember that it often takes a few minutes for resuscitative measures to have an effect.

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First steps

1. Ask the patient a simple question. In assessing any patient, a simple question such as “How are you” can provide valuable information. A normal verbal response implies that the patient has a patent airway, is breathing and has brain perfusion. If the patient can only speak in short sentences, they may have extreme respiratory distress. Failure of the patient to respond is a clear marker of serious illness.
2. Use vital signs monitoring early. Apply a pulse oximeter, ECG monitor and continuous non-invasive blood pressure monitor to all critically ill patients, as soon as is safely possible.

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Airway (A)

Treat airway obstruction as a medical emergency and obtain expert help immediately. Untreated, airway obstruction leads to a lowered PaO2 and risks hypoxic damage to the brain, kidneys and heart, cardiac arrest, and even death.

1. Look for the signs of airway obstruction:
    - Airway obstruction leads to paradoxical chest and abdominal movements (‘see-saw’ respirations) and the use of the accessory muscles of respiration. Central cyanosis is a late sign of airway obstruction. In complete airway obstruction, there are no breath sounds at the mouth or nose. In partial obstruction, air entry is diminished and often noisy. Certain

Related documents

Guidance for safer handling (2.34MB)
Paediatric emergency treatment chart (79KB)

noises assist in localizing the level of the obstruction.
    - In the critically ill patient, depressed consciousness often leads to airway obstruction.
2. Treat airway obstruction as a medical emergency:
    - Obtain expert help immediately. Untreated, airway obstruction leads to a lowered PaO2 and risks hypoxic damage to the brain, kidneys and heart, cardiac arrest, and even death.
    - In the majority of cases, simple methods of airway clearance are all that are required (e.g., airway opening manoeuvres, airways suction, insertion of an oropharyngeal or nasopharyngeal airway). Tracheal intubation may be required, where simple airway opening measures fail.
3. Give oxygen at high concentration:
    - Provide high concentration oxygen using a mask with an oxygen reservoir. Ensure that the oxygen flow rate is sufficient (usually > 10 litres min-1) to prevent collapse of the reservoir during inspiration. Where intubation has been necessary, high concentration oxygen can be given via a bag-valve-mask system.
    - In acute respiratory failure, the PaO2 should be kept as close to 13kPa (100 mmHg) as possible, but at least above 8 kPa (60 mmHg) or 90% saturation on a pulse oximeter.

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Breathing (B)

During the immediate assessment of breathing, it is vital to diagnose and treat immediately life-threatening conditions, e.g., acute severe asthma, pulmonary oedema, tension pneumothorax, massive haemothorax.

1. Look for the general signs of respiratory distress: sweating, central cyanosis, use of the accessory muscles of respiration, abdominal breathing.
2. Count the respiratory rate. The normal rate is between 12 and 20 breaths per minute. High rates, and especially increasing rates, are markers of illness and a warning that the patient may suddenly deteriorate.
3. Assess the depth of each breath, the pattern (rhythm) of respiration and whether chest expansion is equal on both sides.
4. Note any chest deformity (this may increase the risk of deterioration in the ability to breathe normally); look for a raised JVP (e.g., in acute severe asthma or a tension pneumothorax); note the presence and patency of any chest drains; remember that abdominal distension may limit diaphragmatic movement, thereby exacerbating respiratory distress.
5. Record the inspired oxygen concentration (%) given to the patient and the SaO2 reading of the pulse oximeter (normally 97-100%). However, remember that the pulse oximeter does not detect hypercapnia and that, if the patient is receiving oxygen therapy, the SaO2 may be normal in the presence of a very high PaCO2.
6. Listen to the patient's breath sounds a short distance from his/her face: Rattling airway noises indicate the presence of airway secretions, usually due to the inability of the patient to cough sufficiently or to take a deep breath. Stridor or wheeze suggests partial, but significant, airway obstruction.
7. Percuss the chest; hyper-resonance suggests a pneumothorax, dullness suggests consolidation or pleural fluid.
8. Auscultate the chest: the quality of the breath sounds should be evaluated. Bronchial breathing indicates lung consolidation; absent or reduced sounds suggest a pneumothorax or pleural fluid.
9. Check the position of the trachea in the suprasternal notch. Deviation to one side indicates mediastinal shift (e.g., pneumothorax, lung fibrosis or pleural fluid).
10. Palpate the chest wall to detect surgical emphysema or crepitus (suggesting a pneumothorax until proven otherwise).
11. The specific treatment of respiratory disorders depends upon the cause. Nevertheless, all critically ill patients should receive oxygen. In a subgroup of patients with chronic obstructive pulmonary disease (COPD), high concentrations of oxygen may have disadvantages and some limitations in therapy may be warranted. Nevertheless, this latter group of patients will also sustain end-organ damage or cardiac arrest if their blood oxygen tensions are allowed to decrease. In this group, aim for a target PaO2 of 8 kPa (60 mmHg) or 90% saturation (SaO2) on pulse oximetry.
12. If the depth or rate of breathing of any patient is judged to be inadequate, or absent, use bag-valve-mask ventilation to improve oxygenation and ventilation, whilst calling urgently for intensive care assistance.

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Circulation (C)

In almost all medical and surgical emergencies, consider hypovolaemia to be the primary cause of shock, until proven otherwise. Unless there are obvious signs of a cardiac cause, give intravenous fluid to any patient with cool peripheries and a fast heart rate. In surgical patients, rapidly exclude haemorrhage (overt or hidden). Remember that respiratory pathology, such as a tension pneumothorax, can also compromise a patient's circulatory state. This should have been treated earlier on in the assessment.

1. Look at the colour of the hands and digits: are they blue, pink, pale or mottled?
2. Assess the limb temperature by feeling the patient's hands: are they cool or warm?
3. Measure the capillary refill time (CRT). It is assessed by applying cutaneous pressure for five

seconds on a fingertip held at heart level (or just above) and counting the time it takes for capillary refill after the pressure has been released. The normal value for CRT is usually less than two seconds.
4. Assess the state of the veins: they may be under-filled or collapsed when hypovolaemia is present.
5. Count the patient's pulse rate.
6. Palpate all the peripheral and central pulses, assessing for presence, rate, quality, regularity and equality. Barely palpable pulses suggest a poor cardiac output, whilst a bounding pulse may indicate sepsis.
7. Measure the patient's blood pressure. Even in shock, the blood pressure may be entirely normal, as compensatory mechanisms increase peripheral resistance in response to reduced cardiac output. Where possible, the diastolic and systolic values should be noted. A low diastolic BP suggests arterial vasodilatation (as in anaphylaxis or sepsis). A narrowed pulse pressure (difference between systolic and diastolic pressures; normally ~ 35-45 mmHg) suggests arterial vasoconstriction (cardiogenic shock or hypovolaemia).
8. Auscultate the heart.
9. Look for other signs of a poor cardiac output, such as reduced level of consciousness and, if the patient has a urinary catheter, oliguria (urine volume < 0.5 ml kg-1 hour-1).
10. Examine the patient thoroughly for external haemorrhage from wounds or drains or evidence of concealed haemorrhage (e.g., thoracic, intraperitoneal or into gut). Remember that intrathoracic, intrabdominal or pelvis blood loss may be significant, even if drains are empty.
11. The specific treatment of cardiovascular collapse will be determined by the cause, but should be directed at fluid replacement, haemorrhage control and restoration of tissue perfusion. Seek out the signs of conditions that are immediately life threatening, e.g., cardiac tamponade, massive or continuing haemorrhage, septicaemic shock, and treat them urgently.
12. Insert one or more large (14 or 16 G) intravenous cannulae. Use short, wide-bore cannulae, as they have the highest flow rate.
13. Take blood from the cannula for routine haematological, biochemical, coagulation and microbiological investigations, and cross-matching, before infusing intravenous fluid.
14. Give a rapid fluid challenge (over 5-10 minutes) of 500 ml of warmed crystalloid solution if the patient is normotensive. Give 1 litre, if the patient is hypotensive. Use smaller volumes (e.g., 250 ml) for patients with known cardiac failure and use closer monitoring (listen to the chest for crepitations after each bolus, consider a CVP line).
15. Reassess the pulse rate and BP regularly (every 5 minutes), aiming for the patient's normal BP or, if this is unknown, a target > 100 mmHg systolic.
16. If the patient shows no signs of improvement, the fluid challenge can be repeated.
17. If symptoms and signs of cardiac failure (dyspnoea, increased heart rate, raised JVP, a third heart sound and pulmonary crepitations on auscultation) occur, decrease the fluid infusion rate or stop the fluids altogether. Seek alternative means of improving tissue perfusion (e.g., inotropes or vasopressors).

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Disability (D)

Common causes of unconsciousness include profound hypoxaemia, hypercapnia, cerebral hypoperfusion, or the recent administration of sedatives or analgesic drugs.

1. Review the ABCs: exclude hypoxaemia and hypotension.
2. Check the patient's drug chart for reversible drug-induced causes of depressed consciousness. Give the appropriate antagonist, where available.
3. Examine the pupils (size, equality and reaction to light).
4. Assess the patient's conscious level using either the AVPU or Glasgow Coma Scales.
5. Measure the blood glucose using a rapid glucose meter or stick method to exclude hypoglycaemia. If below 3 mmol l-1, give 25-50 ml of 50% glucose solution intravenously.
6. Nurse unconscious patients in the recovery position, where possible.

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Exposure / Examination (E)

In order that patients are examined properly, and detail is not missed, full exposure of the body may be necessary. Do this in a way that respects the dignity of the patient and prevents heat loss.

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Additional information

1. Take a full clinical history from the patient, his relatives or friends, and other staff.
2. Review the patient notes and charts
   a.) Study both absolute and trended values of vital signs.
   b.) Check that important routine medications are prescribed and being administered.
3. Review the results of laboratory or radiological investigations.
4. Consider which level of care is required by the patient (e.g., ward, HDU, ICU).
5. Make complete entries in the patient's notes of your finding, assessment and treatment. Record the patient's response to therapy.
6. Consider definitive treatment of the patient's underlying condition.

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