

Everything You Need to Know about Intensive Care Mini Series

Session One: Triage of The Emergency Patient

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Triage and Assessment of the Emergency patient

Triage (from the French 'to sort') is a 30-60 seconds rapid assessment of key vital parameters to evaluate if the main body systems are stable. Triage aims to identify conditions that could rapidly become life threatening so that these can be promptly addressed. The 'primary survey' is an important step in the treatment of the patient and should be undertaken as soon as possible and without causing stress to the patient. This concentrates majorly on the cardiovascular, respiratory and neurological systems. In every case, **the patient should be considered unstable until proven otherwise**. Triage can start as early as when the owner phones the practice. All members of staff – including those with a non medical background - should be adequately trained to triage. The practice should have an area

reserved to triage and care of the emergency patient and this area should include means to provide

Primary survey

The mnemonic ABCD can help in remembering the steps to undertake at this point.

- A- Airway (or Alertness)
- B- Breathing
- C- Circulation
- D- Disability from a neurologic point of you

oxygen, equipment to perform emergency procedures and CPR.

<u>Airways:</u> the patency of these must be assessed and the level of consciousness, alertness of the patient noted.

<u>Breathing:</u> respiratory rate and character must be assessed. Increased respiratory rate may indicate pain, stress, fear and/or decreased ability to ventilate due to thoracic trauma. Decreased respiratory rate may indicate head and/or cervical trauma involving the respiratory centre or increased intracranial pressure. Inspiratory effort is often associated with upper respiratory tract obstruction and expiratory effort with lower respiratory tract issues. The lung fields should be auscultated and evaluated for breath sounds. In the case of increased lung sounds the thoracic inlet should be auscultated to rule out referred upper respiratory noise, indicating disease of the upper respiratory tract. Decreased lung sounds may indicate the intrathoracic presence of air (dorsally), fluid (ventrally) or herniated viscera.

Evidence of thoracic trauma (rib fractures, flail chest, penetrating wounds) may be present. If the patient allows, mucous membranes should be assessed and, if cyanotic, oxygen should be delivered with no hesitation. Also, if the patient allows it, pulse oximetry can be used to evaluate the oxygen saturation of haemoglobin in the patient's blood. Although there are many factors that can cause artefacts with this piece of equipment, artificial high readings are very rare. It is paramount not to stress patients which are already in respiratory distress (mostly cats). If there is a possibility of trauma or pleural space disease and the patient does not get more stable (or worsens) after 10-15 minutes of oxygen therapy, a cage side ultrasound should be performed or the chest tapped

Circulation: pulse rate, rhythm and character can be used to assess treatment.

Pulse rate: most patients in shock will have an elevated pulse rate (cats may have a decreased rate). Pulse rate can be used to assess response to fluid bolus and on-going fluid therapy.

Pulse rhythm: Arrhythmias detected on pulse palpation may indicate the presence of VPCs - indicative of many conditions related to trauma (blunt chest trauma, splenic involvement, hypoxaemia..). Pulse palpation must be performed simultaneously to cardiac auscultation in order to identify the presence of pulse deficits which may indicate rhythm abnormality.

Pulse character: initially trauma patients will have 'tall and narrow' or 'weak and thready' pulses; this is due to an increased stroke volume and vasoconstriction throughout the body to maintain blood flow to the vital organs. When the patient enters the decompensated shock phase the pulse may feel wide and are easily compressible.

Extremities' temperature: a subjective assessment of skin and peripheral temperature may indicate poor perfusion due to vasoconstriction or hypovolaemia.

Mucous membrane colour: pale mucous membranes may indicate vasoconstriction or anaemia. Cyanosis may indicate a low haemoglobin oxygen content (>5g/dL desaturated haemoglobin) *Capillary refill time*: this may not be helpful in the initial assessment as it may be decreased or increased but may be more important in the treatment phase

Mentation: depressed mentation or agitation may indicate decreased oxygen carriage to the brain

<u>Neurological Disability:</u> rapid assessment of neurological function is important. The presence of seizures, a decrease in the level of consciousness (stupor or coma), evidence of spinal or skull fracture are all indicative of neurological involvement.

Whilst performing the primary survey (or immediately after) a brief history can be sought together with details about the type of trauma/toxin exposition...

The requirement for cage side diagnostics varies depending on the initial triage findings and some can be performed at the time of IV cannula placement. Emergency diagnostics tests typically include haematocrit, total solids (remember that haematocrit may not immediately drop in the face of haemorrhage but total solids will) blood urea nitrogen, blood glucose, lactate and blood gases (acid base, electrolytes and oxygenation status), ECG, blood pressure. In some cases emergency imaging (cage side emergency ultrasound (FAST exams) are required.

Rapid goal directed stabilization of the cardiorespiratory and neurologic systems and the correction of specific abnormalities identified on the minimum emergency data-base (i.e. correction of hypotension, pain, arrhythmias etc.) are paramount for the survival of the patient. Emergency treatments may include:

- Aggressive fluidtherapy: ideally repeated small volume IV boluses but only once contraindications (heart failure, pulmonary contusions, severe anaemia, severe hypoalbuminaemia..) have been excluded. Hypertonic saline or mannitol may be considered in patients with brain injury and signs of raised intracranial pressure.
- Analgesia: most trauma patient will benefit from analgesia which can be given in small increments.
- Oxygen therapy: must be provided without stressing the patient
- Tapping the chest if intrapleural disease is suspected and it is clinically affecting the patient

Secondary Survey

After the primary survey has been completed and life-saving procedures instituted, a more detailed secondary examination should be undertaken and radiographic studies and further laboratory tests can follow. A useful mnemonic for such an evaluation is **A CRASH PLAN**.

A Airway

- **C** Cardiovascular/circulatory
- R Respiratory
- A Abdomen
- S Spine
- H Head (including eye, ears and neck)
- P Pelvis (including rectal exam)
- L Limbs (including tail)
- A Arteries
- N Nerves (including cranial nerves, reflexes, pain sensation)

In addition to a full clinical examination a more detailed history should be taken from the owner, including previous illnesses, injuries, medications etc.. An important question to try to find the answer to is: 'was the patient involved in the trauma because it was ill or is it ill because it was involve in a trauma?'

Conclusions:

The 60 s in which a patient undergoes triage are vital and only life-threatening issues should be identified and treated. Preparation for emergencies and training to perform life saving procedures are hence paramount for a successful outcome. Only once the primary survey and the necessary emergency test have been performed the patient can undergo more detailed examination/tests