management of medical emergencies and first aid

Aims &Objectives

At the end of the session the students will be able to:

- identify medical emergencies
- Understand resuscitation procedures
- provide immediate management of anaphylactic reaction, hypoglycaemia, upper respiratory obstruction, cardiac arrest, fits, vasovagal attack, inhalation or ingestion of foreign bodies
- apply the principles of first aid

First Aid

- Burns
- Nose bleed
- Cuts
- Foreign object in the eye

Asthma

Clinical features of acute severe asthma include:

- Inability to complete sentences in one breath.
- Raised respiratory rate
- Increased heart rate

Management of Asthma

Acute asthma

- Most attacks will respond to a few ‘activations’ of the patient’s own inhaler such as salbutamol
- Repeat doses may be necessary.
- Reassure and calm patient

Severe / life threatening

- Call emergency service
- Call for help and when available give oxygen
- 4–6 activations from the salbutamol inhaler should be given using a large-volume spacer device and repeated every 10 minutes if necessary until an ambulance arrives.

Common medical emergencies in dental practice

Signs and symptoms

Anaphylaxis

- Urticaria, erythema, rhinitis, conjunctivitis.
- Abdominal pain, vomiting, diarrhoea.
- Flushing and swelling of the face, especially of the eyelids and lips.

- Difficulty in breathing
- Vasodilation leading to low blood pressure and collapse.
- Respiratory arrest
- Cardiac arrest.

Common medical emergencies in dental practice

Management

Anaphylaxis

- Call for emergency service
- Lay the patient flat & raise the feet (restoration of blood pressure)
- administer oxygen (10 litres per minute).

Severe reactions

- adrenaline should be given intramuscularly

[1] Life-threatening problems:

Airway:	swelling, hoarseness, stridor
Breathing:	rapid breathing, wheeze, fatigue, cyanosis, confusion
Circulation:	pale, clammy, faintness, drowsy/coma

[2] Intramuscular Adrenaline

IM doses of 1:1000 adrenaline (repeat after 5 min if no better)

• Adult	500 micrograms IM (0.5 mL)
• Child more than 12 years:	500 micrograms IM (0.5 mL)
• Child 6 -12 years:	300 micrograms IM (0.3 mL)
• Child less than 6 years:	150 micrograms IM (0.15 mL)

Common medical emergencies in dental practice

Signs and symptoms

Cardiac emergencies

- chest pain
- shortness of breath
- fast and slow heart rates
- increased respiratory rate
- low blood pressure
- poor peripheral perfusion - altered mental state

Myocardial infarction

- Progressive onset of severe, central crushing chest pain.
- May radiate to the shoulders, arms and into the neck, jaw or through to the back.
- Pale & clammy skin
- Nausea and vomiting
- Weak pulse
- Shortness of breath.

Common medical emergencies in dental practice
Management

Cardiac Emergencies

- Angina
- Myocardial Infarction

Angina

- Give sublingual GTN spray if this has not already been used.

Myocardial Infarction

- Call immediately for an ambulance.
- Give high flow oxygen (10 litres per minute).
- Give sublingual GTN spray
- Reassure the patient
- Give aspirin in a single dose of 300 mg orally, crushed or chewed.

Common medical emergencies in dental practice
Signs and symptoms

Epilepsy

- Aura phase
- Tonic phase
- Clonic phase

Epilepsy

Common medical emergencies in dental practice
Management

Epilepsy

- Call for help
- High flow oxygen
- Do not attempt to restrain
- Protect the patient from accidental injury.
- When safe place the patient in the recovery position
- Check for ‘signs of life’
- Seek medical support

Common medical emergencies in dental practice Signs and symptoms

Hypoglycaemia

- **Symptoms and signs:**
  - Shaking & trembling
  - Sweating
  - Headache & difficulty in concentration
  - Slurring of speech
  - Aggression and confusion
  - Fitting
  - Unconsciousness

Common medical emergencies in dental practice
Management

Hypoglycaemia

Confirm the diagnosis by measuring the blood glucose

Early stages

- Oral glucose(repeated after 10 minutes)

Severe cases

- Call for Emergency Assistance
- IM Glucagon should be given
- Re-check blood glucose after 10 minutes
- Once alert give a drink and food high in glucose
- If patient becomes unconscious, always check for ‘signs of life’

Common medical emergencies in dental practice
Signs and symptoms

Syncope

(vasovagal attack, simple faint)

Patient feels:

- faint / dizzy / light headed;

Signs:

-slow pulse rate

-pallor and sweating

-nausea and vomiting

Patient may lose consciousness.

Common medical emergencies in dental practice
Signs and symptoms

Syncope

- Lay the patient flat
- Give oxygen, loosen any tight clothing around the neck
- Expect rapid recovery
- Unresponsive - always check for ‘signs of life’

Common medical emergencies in dental practice
Signs and symptoms

Choking

The patient may:

- cough and splutter.
- complain of difficulty breathing.
- wheeze
- stridor

They may develop ‘paradoxical’ chest or abdominal movements.

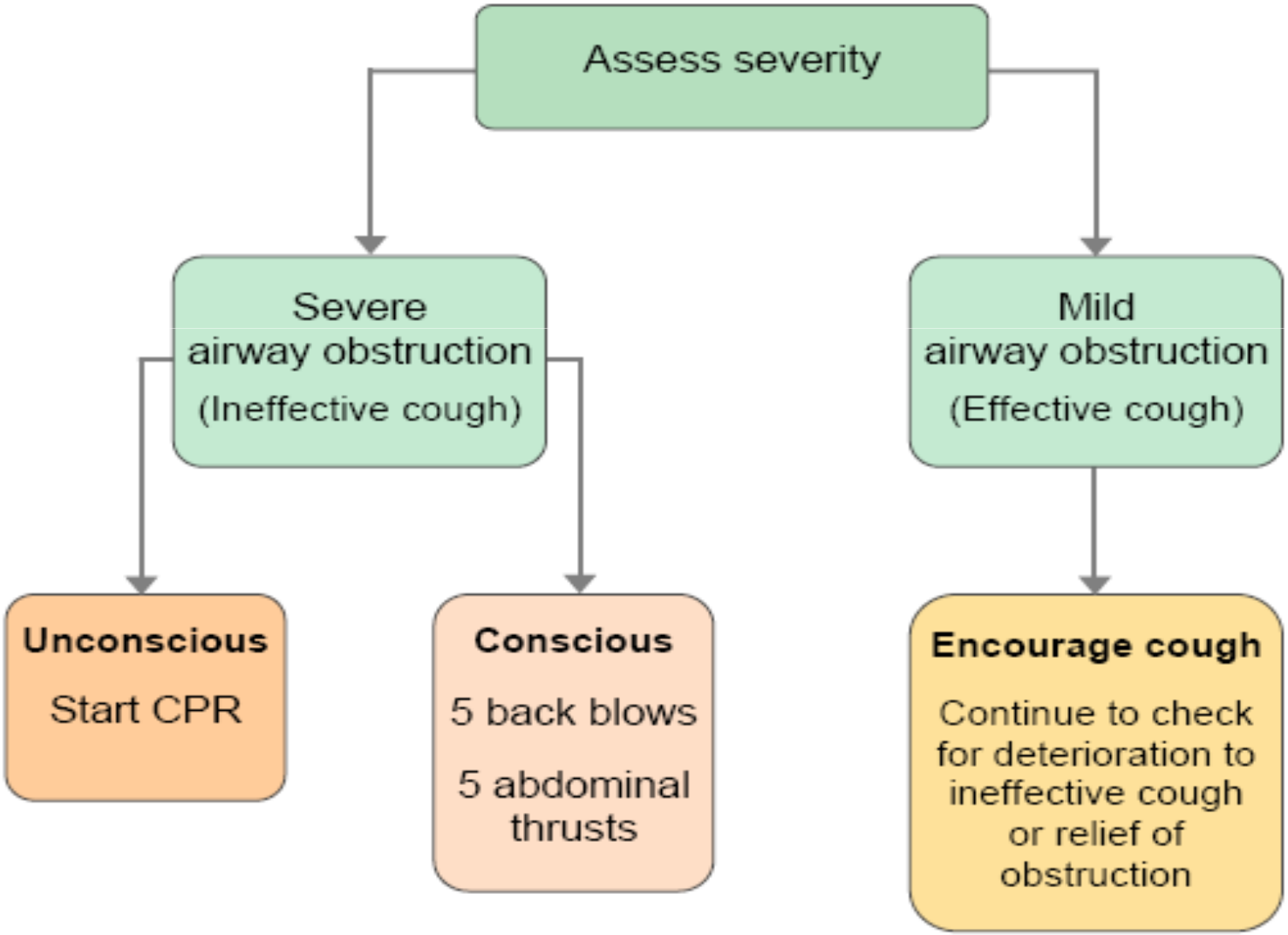
They may become cyanosed and lose consciousness.

Common medical emergencies in dental practice
Management

Choking

- Encourage to cough vigorously
- If can’ t cough, sharp back blows/ abdominal thrusts should be delivered.
- Remove any visible foreign bodies from the mouth and pharynx.
- Treat wheeze with a salbutamol inhaler
- If foreign material aspirated or patient symptomatic refer to hospital as an emergency
- If the patient becomes unconscious, start BLS

Adult and Child Choking Algorithm



The ABC of medical emergencies

Airway

Partial obstruction

- air entry is reduced and noisy
  - stridor
  - wheeze
  - snoring
- 'see-saw' respirations

Complete obstruction

- blue lips and tongue
- no breath sounds

What to do!

- airway clearance
  - head tilt/ chin lift
  - jaw thrust
- remove visible foreign bodies, debris
- simple airway adjuncts
  - oropharyngeal
  - nasopharyngeal
- give oxygen

The ABC of medical emergencies

Breathing

- Look, listen and feel
- Count the respiratory rate
- Assess the
  - depth of each breath
  - pattern of respiration
  - Listen to breath sounds
    - gurgling
    - stridor
    - wheeze

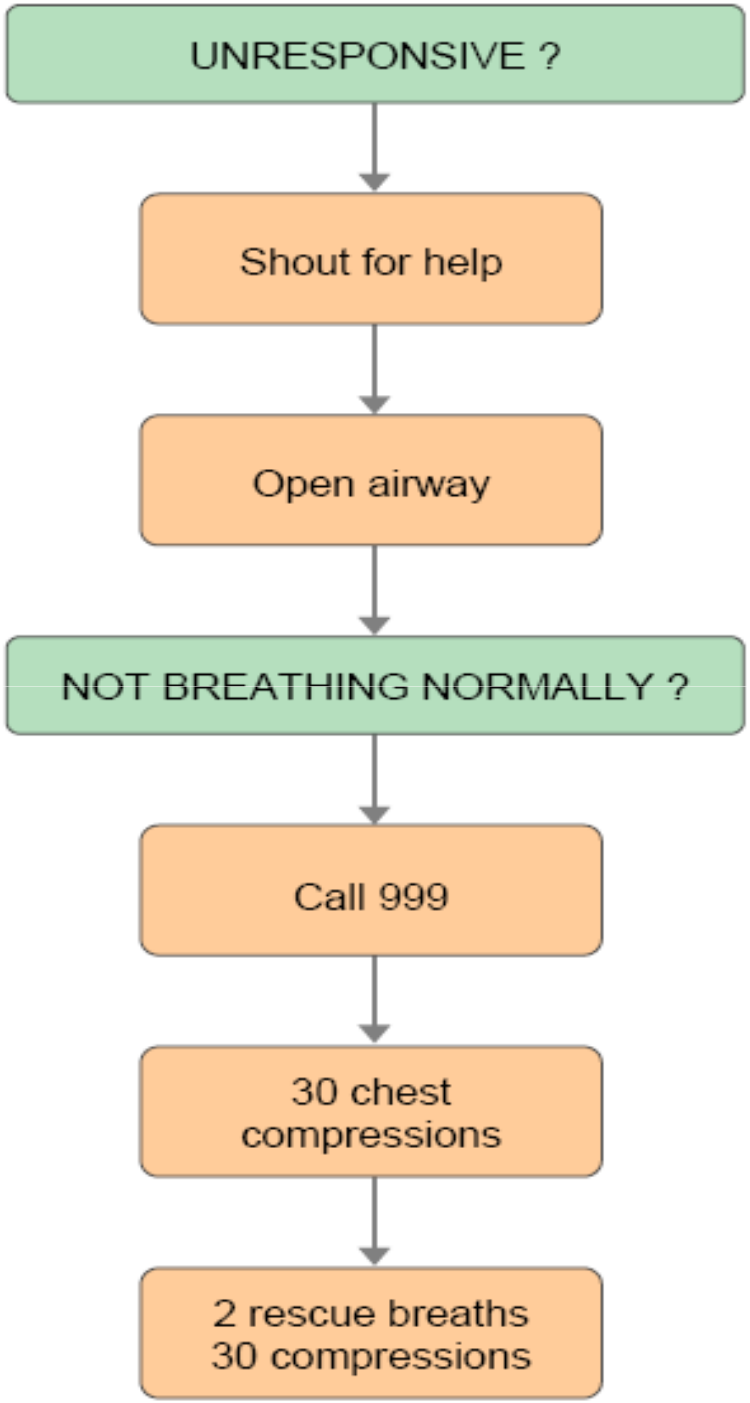
The **ABC** of medical emergencies

Circulation

- Look at the colour of the hands and fingers
- Assess the limb temperature
- Assess capillary refill time
- What is the pulse rate
- Is the pulse strong or weak

Adult Basic Life Support Algorithm

Based on the Resuscitation Council (UK)



Adult BLS

- Unresponsive adult
- Check safe environment
- Shout for help
- Shake to rouse
- Check airway
- Check breathing
- If not breathing send for an ambulance

Adult BLS

- Start chest compression, do 30 compressions
- Give 2 breaths
- Follow by 30 compressions
- Continue until ambulance arrives
  - Avoid interruptions
  - Avoid provider fatigue

Adult BLS

Other considerations

- Airway adjuncts
- Pocket masks
- Oxygen
- Bag valve mask

Child and Infant BLS

Child – one year old up to puberty

Infant – less than one year

Procedure

- Unresponsive child
- Check safe environment
- Shout for help
- Shake to rouse
- Check airway
- Check breathing
- If not breathing give 5 rescue breaths

Child and Infant BLS

When to send for an ambulance

- When in a team – send as soon as you know the patient is not breathing
- If alone – perform CPR for one minute then call for an ambulance

Child and Infant BLS

- No obvious sign of circulation
- Start chest compression

  - rate of 15 compressions to 2 breaths
- For infant use two finger pressure
- For young child use the heel of one hand
- For an older child use two hands