Medical Emergencies and Current Management in Dentistry

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PREVENTION!

- Attitude and environment
- Usually a clue in the history
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- Airway protection
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- Drills – roles, training, contact numbers
PREVENTION!

• Attitude and environment
• Usually a clue in the history
• Airway protection
• Drills – roles, training, contact numbers
• Do not work alone
IN A DENTAL SETTING

- Particular issues could include access, patient movement, pre-existing conditions

- Potential for increased “pressure” from carers
THE ABCDE APPROACH

A – Airway
B – Breathing
C – Circulation
D – Disability
E – Exposure
AIRWAY

- Finger sweep
- Suction
- Head tilt/Chin lift
AIRWAY

- Finger sweep
- Suction
- Head tilt/Chin lift
- Jaw thrust- injury or flexion deformity
BREATHING

Look, listen and feel
CIRCULATION

Central pulse e.g. carotid for the competent/experienced practitioner
DISABILITY

Neurological (conscious status) e.g. Post head injury/seizure- AVPU

A lertness
V ocal stimuli response
P ain response
U nresponsive
EXPOSURE

For examination of rash/application of defibrillator paddles (AED)
DRUGS FOR EMERGENCY DRUG BOX

• Adrenaline (Epinephrine) 1 in 1000
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- Aspirin (300mg)
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- Salbutamol inhaler
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- Glucagon (1mg) (Glucose)
- GTN tabs/sprays
- Oxygen
- Salbutamol inhaler
- Midazolam buccal liquid or Midazolam injection solution via buccal or nasal route (10mg)
POSSIBLE ROUTES OF DRUG ADMINISTRATION

- Oral
- Sublingual
- Subcutaneous
- Intramuscular
- Inhalation
- Rectal
- Intravenous
IN DENTISTRY

- Oral
- Sublingual
- Subcutaneous
- Intramuscular
- Inhalation
- Rectal!
- Intravenous only if experienced
COLLAPSE OF UNKNOWN CAUSE

• Lie patient flat, raise legs – most recover
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- Maintain airway, give oxygen- ABCDE
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- Check breathing – agonal gasps
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• If not breathing/abnormal breathing (no pulse) = cardiac arrest
• No “signs of life”
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- Get help at an early stage
CARDIAC ARREST

• Main cause arrhythmia (VF)

• AED
REMEMBER RATIOS OF CPR

• No “rescue breaths”

• 30 compressions to 2 ventilations in adults

• Importance of early defibrillation
Unresponsive

Open Airway
Not breathing normally

CPR
Until AED is attached

AED
Assesses rhythm +

Shock advised

1 shock
150-350J biphasic
Or 360J monophasic

Immediately resume
CPR 30:2
For 2 min

No shock advised

Immediately resume
CPR 30:2
For 2 min

Continue until the victim starts to breathe normally

Call for help

Send or go for AED
CPR IN PREGNANCY

- Left lateral position
SPECIFIC MEDICAL EMERGENCIES in Dentistry

• Uncommon – most will only see a faint
• ABCDE approach to all situations
VASO-VAGAL SYNCOPE

- Commonest
- Lie flat, raise legs - ABCDE
ANAPHYLAXIS – SIGNS AND SYMPTOMS

- Paraesthesia, flushing, facial swelling
Should this patient be given adrenaline?
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- Generalised itching – hands and feet
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- Bronchospasm and laryngospasm (wheezing and breathing difficulty)
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- Paraesthesia, flushing, facial swelling
- Generalised itching – hands and feet
- Bronchospasm and laryngospasm (wheezing and breathing difficulty)
- Rapid weak pulse together with fall in blood pressure
ANAPHYLAXIS – MANAGEMENT

ABCDE
ANAPHYLAXIS – MANAGEMENT

• ADRENALINE! (Epinephrine)
• 0.5ml (500 micrograms) 1 in 1000 solution IM repeated after 5 minutes if no clinical improvement
ADRENALINE (EPINEPHRINE)

- Alpha adrenergic action leads to vasoconstriction increasing myocardial and cerebral perfusion
ADRENALINE (EPINEPHRINE)

- Reverses peripheral vasodilatation and reduces oedema
- Beta receptor activity dilates the airway, increases the force of myocardial contraction
ADRENALINE (EPINEPHRINE)

• Reverses peripheral vasodilatation and reduces oedema
• Beta receptor activity dilates the airway, increases the force of myocardial contraction
• Beta activity suppresses histamine and leukotriene release
ADRENALINE (EPINEPHRINE)

- Adverse effects are extremely rare when appropriate doses are given intramuscularly
ANAPHYLAXIS – MANAGEMENT

• ADRENALINE! (Epinephrine)
• 0.5ml (500 micrograms) 1 in 1000 solution IM repeated after 5 minutes if no clinical improvement
• Lie flat, maintain airway, supplemental oxygen
ANAPHYLAXIS - MANAGEMENT

• Adrenaline is indicated when there are signs of stridor, wheeze, respiratory distress or clinical signs of shock
ANAPHYLAXIS

• The wheezing can be helped by giving inhaled salbutamol
“PANIC ATTACKS”

- Sometimes mistaken for anaphylaxis
- ABCDE approach
“PANIC ATTACKS”

- Sometimes mistaken for anaphylaxis
- Anxiety driven
“PANIC ATTACKS”

• Signs and symptoms:
  – Anxiety
“PANIC ATTACKS”

- Signs and symptoms:
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  - Weak, dizzy, light-headed
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• Signs and symptoms:
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  – Paraesthesias
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  – Paraesthesias
  – Palpitations
“PANIC ATTACKS”

• Signs and symptoms:
  – Anxiety
  – Weak, dizzy, light-headed
  – Paraesthesias
  – Palpitations
  – Carpo-pedal spasms
“PANIC ATTACKS”

• Signs and symptoms:
  – Anxiety
  – Weak, dizzy, light-headed
  – Paraesthesias
  – Palpitations
  – Carpo-pedal spasms

• An “anxiety rash” could be confused for the rash in anaphylaxis
MANAGEMENT

• Rebreathing exhaled air
MANAGEMENT

• Rebreathing exhaled air

• Worth having a paper bag handy!
ASTHMA

• Most attacks will respond to 2 puffs of the patients beta\textsubscript{2} – adrenoceptor stimulant inhaler
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• If no rapid response, repeat-and think ABCDE

• Most patients who struggle to breathe prefer to be in a sitting position- unless they lose consciousness
ASTHMA

- Most attacks will respond to 2 puffs of the patient's beta$_2$ – adrenoceptor stimulant inhaler
- If no rapid response, repeat
- Administer oxygen
- Repeat inhaler – every 10 minutes
CHEST PAIN, ANGINA, MYOCARDIAL INFARCTION

- Diagnosis of the problem
- ABCDE – supplemental oxygen
- Use the GTN spray
- Aspirin should be given (300mg) in MI
CHEST PAIN, ANGINA, MYOCARDIAL INFARCTION

• Diagnosis of the problem
• A,B,C – supplemental oxygen
• Use the GTN spray
• Aspirin should be given (300mg) in MI
• Entonox is helpful
MYOCARDIAL INFARCTION

• If aspirin has been given, the hospital MUST BE INFORMED
EPILEPSY

• Medication should only be given if convulsive seizures are prolonged or last 5 minutes or more or are repeated rapidly.
EPILEPSY

• 10mg buccal Midazolam ABCDE
EPILEPSY

• 10mg buccal Midazolam

• In children, rectal diazepam
HYPOGLYCAEMIA – SYMPTOMS AND SIGNS

• Shaking/trembling
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SYMPTOMS AND SIGNS

- Shaking/trembling
- Sweating
HYPOGLYCAEMIA – SYMPTOMS AND SIGNS

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- “Pins and Needles” in lips and tongue
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- Hunger
HYPOGLYCAEMIA – SYMPTOMS AND SIGNS

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• “Pins and Needles” in lips and tongue
• Hunger
• Slurring of speech
HYPOGLYCAEMIA – SYMPTOMS AND SIGNS

- Shaking/trembling
- Sweating
- “Pins and Needles” in lips and tongue
- Hunger
- Slurring of speech
- Confusion
HYPOGLYCAEMIA – SYMPTOMS AND SIGNS

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- Hunger
- Slurring of speech
- Confusion
- Change of behaviour
HYPOGLYCAEMIA –
SYMPTOMS AND SIGNS

• Shaking/trembling
• Sweating
• “Pins and Needles” in lips and tongue
• Hunger
• Slurring of speech
• Confusion
• Change of behaviour

• Unconsciousness- ABCDE
HYPOGLYCAEMIA - MANAGEMENT

- Glucagon 1mg IM/SC
HYPOGLYCAEMIA - MANAGEMENT

• Glucagon 1mg IM/SC

• Once regains consciousness, oral glucose
INHALED FOREIGN BODY

- Prevention!
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- Allow them to cough vigorously
INHALED FOREIGN BODY

- Ask “Are you choking”?!
CHOKING - MILD

• Patient answers “YES”!

• Victim is able to cough and breathe
CHOKING - SEVERE

- Unable to speak
- Unable to breathe
- Wheezy
- Attempts at coughing are silent
- Unconsciousness
Assess Severity

Severe airway obstruction (Ineffective Cough)

- Unconscious
  - Start CPR

- Conscious
  - 5 back blows
  - 5 abdominal thrusts

Mild airway obstruction (Effective Cough)

- Encourage Cough
  - Continue to check for deterioration to ineffective cough or relief of obstruction
ADRENAL CRISIS

• Signs and symptoms
  – Loss of consciousness
  – Rapid, weak or impalpable pulse
  – Blood pressure falls rapidly
ADRENAL CRISIS - TREATMENT

• Lay patient flat and raise their legs
ADRENAL CRISIS - TREATMENT

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• Clear airway and administer oxygen-ABCDE
ADRENAL CRISIS - TREATMENT

• Lay patient flat and raise their legs

• Clear airway and administer oxygen
ADRENAL CRISIS – TREATMENT

• 200mg Hydrocortisone I.V.

• I.V. fluids
ADRENAL CRISIS - TREATMENT

• Do not discharge!
DEVELOPMENTS IN MEDICAL EMERGENCY MANAGEMENT

• Rationalisation of the Drug Box contents
DEVELOPMENTS IN MEDICAL EMERGENCY MANAGEMENT

- Rationalisation of the Drug Box contents
- Practical delivery routes for drugs
- Resuscitation Guidelines particularly the AED
USEFUL REFERENCE

CONCLUSIONS

- The use of emergency drugs is safe – when the diagnosis is correct!
- The drug kit should be checked regularly to ensure that it is up to date
- Stick to basic principles