**Medical emergencies**

In any dental clinic the dental staff should be trained for such emergencies . most importantly the ABCs should be maintained ; airway ,breathing and circulation .

**ABC:**

-Airway should be checked for patency

-if the patient is breathing with patent airway and circulation is normal then the patient is stable .

There should be emergency supplies in the clinic , we should be trained for IV access ,high volume suction ,emergency drugs and facilities to administer oxygen .

**Hypersensitivity reaction**

**\*Type 1 🡪immediate type of allergy ;anaphylaxis reaction .**

-antibody-antigen induced reaction ,there’ll be secretion of IgE . reaction persists for seconds to minutes .

Example : bronchial asthma, hay fever , allergic rhinitis , angio edema( facial swelling ,common ) .

Initial signs 🡪 erythema ,swelling and urticaria

Delayed signs 🡪 shortness of breath .

The immediate action to be done 🡪 to stop administration of all drugs and give hydrocortisone IV in addition to epinephrine .( due to the effect of IgE which is vasodilation and the patient might undergo a hypovolemic shock so he should be given epinephrine to induce vasoconstriction ) .

**\*\* the drug of choice for immediate management is Epinephrine .**

\*\*cortisone and antihistamines are given to prevent the delayed signs .

-the presence of respiratory signs require immediate management .

-wheezing ,difficulty in breathing ,tachypnea ,stridor indicate the presence of severe allergic reaction that require immediate management .

 🡪 stop the procedure you’re doing especially if local anesthesia is being administered ,make sure of airways’ patency and call the emergency most importantly .

-epinephrine is ideally given subcutaneously but can be given intramuscular as well .

**chest discomfort during dental procedures :**

-always suspect the worse in such cases , as in assuming the discomfort due to MI or angina . and if the medical history of the patient suggests so as in hypertension or if the patient had no medical care at all .

 🡪signs associated with angina or MI ;pressing nature of pain ,choking feeling ,pain radiating to the shoulder or to the jaw /neck ,associated with stress or heavy meal and relieved by vasodilators ( nitroglycerin ) or rest , sweating ,nausea ,dyspnea and weakness .

\*management : terminate the procedure , the patient is placed in a semi supine position and given nitroglycerine commonly as tablets sublingually ‘ given in spray or gel form in patients with loss of consciousness and patient is also given oxygen . **all these are performed after calling the emergency .**

\*in suspected MI the patient can chew aspirin which is found to be effective in reducing the complications of MI .

-might be due to GI diseases as in Gastroesophygeal reflux disease / gastric ulcers if placed in a supine position or in prolonged procedures .

-might occur in patients with muscle spasm disease if placed in an uncomfortable position since spasm would occur in muscles of the chest. ( spasm in intercostal muscles or ribs ).

-might be psychogenic .

**\*respiratory difficulty while performing the procedure :**

-might be related to asthma if he has history of allergy or due to stress that caused hyperventilation .

-aspiration of foreign body during the dental procedure common in patients under sedation .

-manifestations of acute asthmatic episodes 🡪 wheezing ,tachycardia ,coughing ,cyanosis ,no sound for breathing ,blushing of the face and confusion . **Anxiety increases the manifestations since it causes bronchoconstriction .**

-management : call the emergency first ,then terminate the procedure ,place the patient in a sitting position to facilitate the breathing , the patient is given oxygen and bronchodilators ;most importantly epinephrine IM or subcutaneous .

The immediate action during the emergency determines the outcome in the patient’s condition

In the emergency the patient is given IV theophylline ,hydrocortisone , fluids and oxygen .

**Hyperventilation**

-very common

-in stressful conditions the patient breathes rapidly , CO2 leaves the body in excessive amounts .

-the patient complains of dizziness ,numbness and carpopedal spasms ( in extreme cases ) ; contraction of hands and feet .This is misdiagnosed with epilepsy and the patient is given oxygen that worsen the condition .

\*\*The management is to increase CO2 in the body by placing the hand over the patient’s mouth so that CO2 doesn’t get out of the body or using a plastic bag/ mask .

**A patient with fits benefits from oxygen while in a hyperventilated patient it makes it worse .**

* Signs : stressed ,anxious ,sudden rapid breathing ,numbness and spasms in hands and feet .
* In the hospital the patient is given Diazepam to relief stress and anxiety , vital signs are monitored and then recovery .

**Foreign body aspiration**

-common in the dental field

-if the foreign object is ingested to the stomach its good but if its aspirated to the lung its worse since it causes infection in the lung and lung abscess .

-signs :coughing ,choking sensation , stridor and dyspnea .

-Easily recognized .

-management : try to get the object out , we might use Heimlich maneuver and the patient is given oxygen .

**Altered consciousness** :

 as in vasovagal attack’’common ‘’, orthostatic hypotension (patient is in supine position for a long time so once he tries to get up he loses consciousness ) , seizures/fits ,LA toxicity ,hypoglycemia , hyper or hypo thyroidism if uncontrolled ,adrenal insufficiency and cerebrovascular compromise .

**-vaso vagal attack** 🡪 reduction of blood flow to the brain due to vasodilation resulting in coma to the patient .

-place the patient in a supine position & the patient’s legs are placed in a position higher than the head or the head is placed between the patient’s knees to induce blood flow to the brain .

- it’s important to reassure the patient .

-occurs due to peripheral vasodilation and central vasoconstriction . that’s why measuring the pulse in a patient with vasovagal attack initially is high then it drops . ( tachycardia then bradycardia )

-**orthostatic hypotension** 🡪let the patient get up slowly and if it occurs manage it the same way you manage vasovagal attack .

\***seizures / fits** :

-loss of consciousness

-convulsions “ tonic –clonic movements “

-vomiting , drooling of saliva in some cases and airway obstruction .

-might present only as headache or loss of consciousness .

- preceded by aura ; it’s important to inform the patient to tell the dentist if there’re signs that indicate the fits before their occurrence .

-terminate the procedure , place the patient in a supine position without interfering or even touching the patient since fits resolve spontaneously except in status epilepticus in which convulsions remain for a period of time . the patient is given Diazepam or any muscle relaxant to reduce the convulsions .

**LA toxicity :**

-occurs if injection is given intravascular and here comes the importance of aspirating syringes .

-some patients are vulnerable to have toxicity as in hypertension patients and patients with cardiovascular diseases

Signs 🡪 anxiety ,confusion , altered speech ,parasthesia or numbness in face or anywhere else .

**\*CVA “cerebro vascular accident “🡪** sudden headache ,unilateral weakness or paralysis in extremities or facial muscles , altered speech ,difficulty in breathing , seizures , visual disturbances and loss of bladder control .

 -management : terminate the procedure, call the emergency ,medical assistants ,supine position with head slightly raised , check the vital signs , patient is given oxygen and basic life support .