

MEDICAL EMERGENCIES

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INTRODUCTION

- Medical emergencies are clinical conditions that are life threatening and requiring prompt care to prevent mortality.
- There are common presentations in emergency and in-patient wards.
- They are common causes of morbidity and mortality.

Examples of Medical Emergencies

- Hypoglycaemia
- Hyperglycaemia
- Acute Severe Asthma
- Cerebrovascular Accident
- Hypertensive Encephalopathy
- Shock
- Upper GIT bleeding

HYPOGLYCEMIA

- This is defined as a Random Blood Sugar of less than 54mg/dL in nondiabetic and 63mg/dL in diabetics

Common Causes of HYPOGLCAEMIA

- Insulin / Oral hypoglycaemic agent overdose
- Use of GLA without adequate meals in diabetics
- Other drugs like Quinine
- Chronic Liver disease
- Alcohol
- Prolong Exercise
- Severe infections
- Malignancies

Those @ risk of Hypoglycaemia

- Elderly patients
- Diabetic patients
- Chronic liver disease
- Chronic Renal Failure
- Unconscious patients
- Alcoholics

Clinical Features

- NEUROGLYCOGENIC SYMPTOMS: confusion, behavioural changes, restlessness, seizures, coma, death
- ADRENERGIC SYMPTOMS : profuse sweating, tremors, hunger pangs, anxiety, palpitation.

DIAGNOSIS

- High index of suspicion: patients presenting with seizures, altered consciousness, confusion
- Investigation: Urgent RBS
- Treatment
-

WHIPPLE'S TRIAD: features consistent with hypoglycaemia, laboratory evidence of hypoglycaemia and recovery after treatment.

TREATMENT

- Treatment depends on the severity and state of the patient
- Glucose containing drink e.g Coke, lucozade
- Sugar
- Glucose infusion: 50% Dextrose in double dilution
- IM Glucagon

Consequencies of delayed Treatment

- Irreversible brain injury
- Death

HYPERTENSIVE ENCEPHALOPATHY

This is one of the hypertensive emergencies

Occurs more commonly in 'Acute' than chronic hypertensives

There is loss of cerebral autoregulation

It is characterized by elevated Blood Pressure, headaches, nausea, vomiting, seizures, restlessness, confusion, loss of consciousness, features of hypertensive retinopathy: grade 3/4

Focal Neurological deficits are very uncommon

Treatment

- ABC of resuscitation
- Cranial CT Scan to exclude a CVA
- Intravenous antihypertensive e.g Labetalol, Sodium Nitroprusside
- Intravenous diuretics e.g Mannitol and Furosemide

Status Epilepticus

A seizure is a neurologic disturbance
(motor,sensory,psychic) that is due to abnormal
excessive hyper synchronous discharges from an
aggregate of central nervous system neurons

This is characterized by repeated episodes of seizures
without intervening regain of consciousness or seizure
lasting more than 15 minutes

Causes

Noncompliance to Anticonvulsant therapy in patients with epilepsy

CNS infections

CNS tumours

Drug overdose

Hypoglycaemia

Hyperglycaemia

Electrolyte imbalance

Alcohol withdrawal

CVA

Management

Stabilize patient:

Place in left lateral ,

Maintain airway patency

Support patient

Give Oxygen

Maintain Circulation

Anticonvulsant Therapy: Diazepam, Lorazepam, Phenytoin

Investigation

Treat underlying cause

May require ICU admission

INVESTIGATIONS

- RBS
- FBC/ ESR
- E,U, Cr
- Serum Calcium
- Liver function Test
- EEG
- CT Scan
- Toxicology screen
- Drug level assay
- Others as indicated

CEREBROVASCULAR ACCIDENT/ STROKE

- CVA is defined as sudden onset focal or global neurological deficit of vascular origin lasting more than 24hrs or leading to death
- CVA may be Ischaemic or haemorrhagic

AETIOLOGY/RISK FACTORS

- Hypertension
- Diabetes Mellitus
- SCA
- Old age
- Substance abuse
- Infections
- Obesity
- Smoking
- Dyslipidaemia
- Cardiac Disease
- Alcohol

CLINICAL FEATURES

- Loss of consciousness
- Hemiparesis
- Aphasia
- Seizures
- Markedly elevated BP
- Irregular pattern of respiration
- Confusion
- Sensory abnormalities like pain
- Dysphagia

INVESTIGATIONS

- Cranial CT Scan
- FBC /ESR
- RBS
- E,U, Cr
- PT/PTTK
- Fasting Serum Lipid
- Others e.g ECG, Echocardiography

TREATMENT

- Hypertension: This is usually not treated until a week after an Ischaemic stroke. Early intervention may be considered in Haemorrhagic stroke
- Compelling indication for early intervention in BP control include SBP>220mmHg, DSP>120mmhg, MABP >145mmHg. Evidence of Myocardial Infarction, Acute Left Ventricular Failure and Rapidly deteriorating Renal Function

TREATMENT

- Thrombolytic Therapy e.g Alteplase
- Recombinant activated Factor VIIa
- Surgical Evacuation of Clot
- Endovascular Coil
- Antiplatelet for secondary prophylaxis

Problems with Stroke patients and Mgt

- Fever: Tepid sponge, Antipyretics , Treat underlying cause
- Decubitus ulcers: Regular turning in bed 2-4 hrly, padding of pressure areas, Pnuematic beds, regular cleaning, early immobilization, keeping skin dry.
- Infection: UTI, Pneumonia: Regular changing of urethral catheter, Sunction regularly, Adequate oral toileting

Hyperglycaemia: Regular RBS check , Insulin therapy as indicated

Aspiration Pneumonia: Nurse in left lateral position, Regularly suctioning

Seizures: Abort with anticonvulsants e.g Diazepam(IM, IV, Rectally)

Hypoxia: Give oxygen to keep Oxygen sat > 92%

- DVT: Early mobilization, adequate rehydration
- Dehydration: Ensure adequate with isotonic fluid e.g 0.9% N/S
- Malnutrition: NG Tube, Feeding
- Gastro/duodenostomy

HYPERGLYCAEMIC EMERGENCIES

- This could be either Diabetic Ketoacidosis or Hyperosmolar Hyperglycaemic state (HHS)

Common precipitants are

- Infections
- Non-compliance to Glucose lowering agents,
- Myocardial infarction

May be the first presentation in a newly diagnosed diabetic

CLINICAL FEATURES

- Polyuria
- Polydypsia
- Dehydration
- Vomiting
- Deep sigh respiration/ Kussmaul's respiration
- Abdominal pain
- Fever
- Weakness
- Confusion
- Unconsciousness/ Coma

DIABETIC KETOACIDOSIS

- This is one of the common medical emergency
- It occurs commonly in Type1 DM
- It is characterized by
 - Hyperglycaemia : RBS> 250mg/dl
 - Dehydration
 - Acidosis
 - Increased plasma osmolality

Hyperosmolar Hyperglycaemic State

- This is common in Type2 DM
- It is characterized by
 - Hyperglycaemia
 - Dehydration
 - Absence of Acidosis
 - Increased plasma osmolality

INVESTIGATIONS

- Random Blood Glucose: usually elevated
- Urinalysis: may show glycosuria, ketonuria
- Urine MCS: may yield positive culture if there's UTI
- E, U , Cr : may be deranged
- Full Blood Count: may show leucocytosis
- Blood Culture : may be positive in Sepsis
- Chest Xray: may show pneumonic changes
- Others as indicated

PROBLEMS IN HYPERGLYCAEMIC COMA

- HYPERGLYCAEMIA
- DEHYDRATION
- ELECTROLYTE DERANGEMENT
- ACIDOSIS
- THROMBOEMBOLIC PHENOMENON
- ACUTE KIDNEY INJURY

Treatment of Problems in HHS and DKA

Dehydration: IVF 0.9% N/S, 5%D/S

Hyperglycaemia: Parenteral soluble insulin, Regular RBS
Monitoring

Electrolyte derangements: Fluid repletion and Correction of
potassium depletion

Acute Kidney Injury: Close Urinary Output Monitoring

Underlying Precipitants: Treat e.g UTI, Pneumonia

Thromboembolic Phenomenon e.g DVT, PE: Anticoagulant
Prophylaxis- Subcut Enoxaparin, Adequate Hydration

ACUTE ASTHMA

Acute Asthma usually presents with a triad of wheeze, breathlessness and cough

Patient may be a known Asthmatic

There may be a history of atopy in patient or family members: atopic conjunctivitis, rhinitis, dermatitis

Clinical Features OF Acute Severe Asthma

- PEF : 30-50% of best or predicted
- Respiratory rate > 25/min
- Tachycardia > 100/min
- Inability to complete sentences in one breath

PRECIPITANTS

- Exposure to allergen or irritant
- Respiratory tract infections
- Non-compliance to medications
- Emotional stress
- Exercise
- Exposure to cold air
- Unidentified in 30% of cases

MANAGEMENT

- Allay Anxiety
- Sit patient up in bed
- Give high flow Oxygen by face mask
- Nebulize bronchodilator e.g Salbutamol which can be repeated every 15 mins
- Add Ipratropium bromide if response is poor to the above
- IV hydrocortisone
- IV Aminophylline (not usually recommended)
- Adequate Hydration
- Antibiotic is not routinely recommended
- Chest Xray may be needed to rule out Pneumothorax especially if patient is not responding to the above lines of Mgt
- May require ICU admission if there is no adequate response

Monitoring Response

- Respiratory rate
- Pulse rate
- Oxygen saturation
- Peak Expiratory Flow rate
- Auscultation

ACUTE UPPER GIT BLEEDING

- This refers to bleeding from the GIT up to the level of the 2nd part of the duodenum
- It is a common medical cause of haemorrhagic shock
- Mortality is high if prompt attention is not given

CLINICAL FEATURES

- Haematemesis
- Meleana stool
- Epigastric pain
- Weakness
- Fainting spells
- Oligoanuria
- Features of shock: low or unrecordable BP, feeble and thready pulse, profuse sweating, cold and clammy extremities, confusion , coma

CAUSES

- Bleeding PUD
- Mallory Weiss Tear
- Variceal bleeding
- Gastric cancer
- Oesophagitis
- Vascular malformation
- Chronic liver disease
- Renal failure
- Infections like VHF (lassa fever)

MANAGEMENT

- ABC of resuscitation:
 - Ensure airway is patent
 - Nurse in left lateral position if unconscious
 - Give Oxygen
 - Ensure IV access with a large bore cannula
 - Restore Circulation by giving IVF e.g normal saline, heamaccel while waiting for blood
- Intravenous PPI e.g Rabeprazole, Omeprazole
- NPO
- Monitor RR, Pulse rate, BP, Urinary Output Closely

- FBC
- RBS
- Group and crossmatch 6 units of blood
- LFT
- E, U, Cr
- PT/PTTK
- Urgent Endoscopy

- Treat any identified underlying cause.

- Surgery may be required if conservative treatments fail.

• THANK YOU FOR
PAYING
ATTENTION

QUESTIONS AND COMMENTS