

GENERAL ANAESTHETICS:

CLASSIFICATION - Refu:

Stages of Anaesthesia:

GIA causes an irregularly descending depression of the CNS.

- 4 stages:

I Stage of Analgesia:

The patient is conscious but drowsy.

II Stage of excitement:

- Patient loses consciousness
- Sympathr. Activity is ↑sed
- ↑HR, ↑B.P., dilated pupil tone

III Stage of surgical Anaesthesia - Muscles Relax

- Reflexes are gradually lost
- Intercostal M's are paralysed

IV Stage of medullary paralysis: Resp And vasomotor centre is depressed.

PRE ANAESTHETIC MEDICATION:

① → To Reduce Anxiety And apprehension: BZDs like diazepam, lorazepam
They Reduce Anxiety.

② → To prevent vagal bradycardia And to Reduce
salivary secretion caused by Anaesthetics
→ Antimuscarinic Agents → Atropine, glycopyrrolate
are used to prevent vagal bradycardia And Hypotension

3) To Relieve pre - And Postoperative pain: opioid Analgesic such as morphine, fentanyl may be used to Relieve pain.

4) For Antiemetic effect - Metoclopramide, domperidone used but ondansetron is preferred

5) To prevent Acid secretion And stress ulcer - H₂ blockers - Ranitidine
PPI - omeprazole

6) To hasten gastric emptying before emergency surgery
- Metoclopramide is used

IV ANAESTHETIC:

PROPOFOL: • most commonly used iv Anaesthetic

↓
1% emulsion

- 1st choice drug for endoscopy
- Action within 15-45 sec.

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↑ Cl⁻ conductance
And hyperpolarization
of neurons →
CNS depression

- It causes CNS depression by enhancing GABA_A Receptor
- It is used for total iv Anaesthesia supplemented by fentanyl.
- Does not cause bronchospasm so preferred in Asthmatics.

PK → bound to Plasma Protein, crosses Placenta, H-L, E-U.

Adv:

- Most used for OP procedures
- No irritation of air passage
- Can be used for Induction And maintenance of Anaesthesia
- causes Resp depression & falls B.P
- High dose causes Rise in blood lipid levels

THIOPENTONE SODIUM: - ultra short Acting barbiturate
- highly Alkaline → so highly irritant.
- 1% - 2.5% solution.

single iv dose, Rapidly enters highly perfused organs like brain, liver and heart of medium anaesthesia.

— Repeated dose will Result in Accumulation of delayed Recovery.

→ $\downarrow$ B.P., $\uparrow$ H.R., $\downarrow$ Resp., $\downarrow$ CBR

Other uses: occasionally used for Rapid control of convulsions
— Narcosis analysis of criminals

ADR: Laryngospasm occurs generally when Resp secretions.
Shivering of delirium occurs.

ppt Auto intermittent porphyria.

INHALATION AN. — Gas: Nitrous oxide.

— Volatile liquid — Halothane, Isoflurane

HALOTHANE:

— Volatile liquid, Non inflammable And non explosive

— $\text{CO}_2 \downarrow$, $\downarrow$ B.P., PR is not Reduced.

— Resp depression ++

— Poor Muscle Relaxant

— Hepatotoxicity on Repeated use.

— Pharyngeal And Laryngeal Reflex are Abolished

early And coughing is suppressed so helpful in Asthma

→ Prolong labour

→ Urine formation is $\downarrow$ sed

Note:

Malignant hyperthermia occur Rarely.

some subjects have An Abnormal RyR1

Ca channel in SR of skeletal muscle



This channel is triggered by halothane to Release Ca^{2+}

→ muscle contraction & heat production.

RA/t/t $\rightarrow$ succinylcholine 10 dantrolene sodium is used

NOTE: The basis of combining halothane / iso flurane & N_2O

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• The Minimal Alveolar concentration (MAC) of halothane / iso flurane diffuse poorly into the blood to produce An is Reduced when given with N_2O because of 2nd gas effect.

- N_2O Rapidly diffuse, where halothane diffuse poorly in blood when they are administered simultaneously they also enter the blood Rapidly Along with N_2O , delivered at 1 l/min

- The Reverse occur when N_2O is discontinued after prolonged Anaesthesia, N_2O having low blood solubility Rapidly diffuses into the Alveoli, PP of O_2 is Reduced. $\rightarrow$ Result in diffusion hypoxia.

COMPLICATION OF GMA:

- 1) CVS $\rightarrow$ Hypotension, cardiac Arrhythmias, cardiac Arrest
- 2) Resp depression
- 3) CNS: convulsions
- 4) GIT: Nausea, vomiting, hepatotoxicity
- 5) Nephrotoxicity
- 6) Malignant hyperthermia.

cont $\rightarrow$ After
2 pg