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Q NO3:

Answere:-

1) General Anesthetia:- These are the drugs that induced reversible loss of conciousness and all sensation.

Feature of GA:-

1) Reversible loss of Conciousness
2) Reversible loss of Sensation
3) Analgesia and amnesia
4) muscle relaxation and abolition of reflexes.

Anesthetic protocols:-

1) premedication
2) Induction of Anesthesia
3) maintenance of anesthesia
4) Skeletal muscle relaxation
5) analgesia as pre-medication during and after operation.
6) use of other drugs
   - To reverse neuromuscular blockage.
   - To reverse the residual effect of opoids (naloxone) and benzodiazepines (flumazenil).

2) Local anesthetics :-

Local anesthetic are the drugs which when applied topically or injected locally, block nerve Conduction and Cause reversible loss of all Sensation in the part supplied by the Nerve.

Order of blockage :

Nerve function is blocked in following manner.
Pian - temperature - touch - pressure - Skeletal muscle power.

Mechanism of Action of Local Anesthesia.

Local Anesthetics act on voltage Sensitive Na^+ Channel.

Local anesthetic are weak bases.

- partly unionized → penetrate the nerve membrane → enter the axon (axonal pH is low) → Reionization of local anesthetics.
- at tissue pH 7.4 → partly ionized

Local anesthetics gain access to its receptor in the open state of the Channel

LAs block the voltage gated Na^+ Channel from inside.

prevent entry of Na^+ ion into the neuron (decreasing the rate of depolarization).

prevent generation of action potential.

No generation and Conduction of impulses to CNS.

Stages of Anesthesia :-

Stage I (stage of analgesia) :-

The patient is Concious but drowsy.

Stage II : (stage of excitment)

- patient loses Conciousness
- Sympathetic activity is increased
- Increased heart rate and increased blood pressure.
- Muscle tone increased
- Breath is irregular.

Stage III (stage of Surgical anesthesia).

- Respiration become regular
- Muscles relaxes
- Reflexes are gradually lost
- Intercostal muscles are paralysed.

Stage Iv (stage of medullary paralysis).

- Respiration and vasometer center are depressed
- Death occure within few minutes.

Q No 1:

Answere: Anthelmintic :- These are group of antiparastic drugs that expel parasitic worms and other internal parasites from the body by either stunning (immobile or unconcious) or killing them with out causing significant damage to the host.

Mebendazole :-

Mechanism of Action :-

Like albendazole, this drug selectively damage intestinal cell in these worms. Thus inhibiting the uptake and intracellular transport of glucose and other nutrient into these parasites. This activity leads to the destruction of the epithelial lining and subsequent death of the parasite.

Side effect :-

Mebandazole is a relatively safe drug although some mild, transient, gastrointestinal problems, may occure.

Praziquantel :-

Mechanism of Action :- This drugs exact mechanism of action is unknown. praziquantel may stimulate muscular Contraction of the parasite, resulting in a type of Spastic paralysis, which Causes the worm to loss its hold on intestinal or vascular tissue. in higher Concentration. This drug may initiate destructive Change in the Integument of the worm. allowing the host defense mechanism. (eg enzyme, Phagocytes) to destroye the parasite.

Side effect :- praziquantel is associated with a number of frequent side effect. Including Gastrointestinal problem Cabdominal Pain, Nausea, vomiting) CNS effect (headache, dizziness). and mild hepatotoxicity.

piperazine citrate :-

Mechanism of action :-

This drug appear to paralyze the worm by blocking the effect of acetyl choline at the parasites neuromuscular junction. The paralyzed worm can then be disloged and expelled from the host (human) intestine during normal bowel movement.

Side effect :-

Side effect such as headache, dizziness, and gastrointestinal disturbance may occure during piperazine citrate administration but these effect are generally mild and transient.

Q no 05 :-

Ans (A) :-

Role of vitamin K :-

Deficiency of vitamin K a fat soluble vitamin is most common in older person with abnormilities of fat absorption and newborn, who are at risk of bleeding due to vitamin K deficiency. The diffeciency is readily treated with oral or parenteral phytonadione (vitamin K).

Blood Clotting :-

Indequate blood clotting can result from vitamin K deficiency, genetically determined error of clotting factor synthetic (eg. hemophilia) a variety of drug induced condition and Thrombocytopenia.

Treatment involve administration of vitamin K. performed clotting factor or anti plasmin drugs.

(B) Thrombolytic agent:-

Mechanism of action: Plasmin is an endogeneous fibronolytic enzyme that degrades clotes by splitting fibrin into fragment. The thrombolytic enzyme catalyze the conversion of the inactive precursor plasminogen to Plasmin.

1) Tissue plasminogen activator: PA is an enzyme that directly Convert plasminogen to plasmin. It has little activity unless it is bound to fibrin. which is theory should make it selective for the plasminogen that has already bound to fibrin. (ie in a clot) should result in less danger of wide spread production of plasmin and spontaneous bleeding.

2) Streptokinase:- Streptokinase is obtained from bacterial although not itself an enzyme Streptokinase form a Complex with endogenous plasminoge

Q NO41

Ans:-

Alkalyting agent:-

Mechanism of Action:-

The alkalyting agent

(12) Causes alkalytion of guanine ~~nucleotides~~ nucleotides located in the DNA Strand. Cross link or them formed between two alkalyted guanines. Thus creating strong loands between or within the DNA Strand in this case these cross link effectively tie up the DNA molecule reducing the ability of the DNA double helix to untwist. if the DNA double helix cannot unravel. the genetic code of cell cannot reproduce and cell reproduction is blocked.

Specific agent:-

- Altretamine
- Busulfan
- Chlorumbucil
- Cyclophosphamid
- Ifosfamide.

Adverse drug reaction.

GI distress

Blood disorder

CNS Neurotoxicity.

Antimetabolities :-

Mechanism of action :-

Cell are able to Synthesize genetic material - (DNA, RNA) from endogenous metabolities known as purin and pyrimidin nucleotides Certain anticancer drugs are Structurally Similar to these endogenous metabolities and Compete with these Compound during DNA/RNA) biosynthesis.

Specific agent :-	Adverse effect.
Methotrexate	• blood disorder (anemia,
mercaptopurine	leukopenia, Thrombocytopenia
Thioguanine	• GI distress (including ulcer-
Cytarabine	ation of GI tract.
Fluorouracil	• Skin disorder
Floxuridine.	• Hepatoxicity.
	• CNS effect.

Plant alkaloids :-

Mechanism of action :-

These agent are also called antimitotic drugs. because these agent (vincristine, vinblastin, vinorelbine) inhibit the formation of the mitotic apparatus.

Specific agent :-	adverse effect.
• vincristine	• blood disorder
• vinblastine	• Hypersensitivity
• vinorelbine	• Joint / muscle pain
• paclitexal	• peripheral neuropathies.
• Docetaxel	• GI distress.

Q No 2

Ans: (A)

Type I Diabetis mellitus:-

A form of Chronic hyperglycemia Caused by Immunologic destruction of pencreatic beta cell.

-> Type 1 diabetes require treatment with insulin.

Type II Diabetis Mellitus :-

A form of chronic hyperglycemia initialy Caused by resistance to insulin often progress to insulin deficiency.

-> The early Stage of type 2 diabetes usually Can be controlled with noninsulin antidiabetic drug.

(B) 1- Insulin:-

Effect:- Insulin has important effect on almost every tissue of the body - the major target organ for insulin action Include.

P-T-O

① Liver:

Insulin Increase the storage of Glucose as Glycogen in the liver. This involves the insertion of additional GLUT2 Glucose transport molecule.

② Skeletal Muscles:-

Insulin stimulate Glycogen Synthesis and protein Synthesis. Glucose transport into muscle cell is facilitated by insertion of GLUT4 transporter into cell plasma membranes.

③ Adipose tissue:-

Insulin facilitate triglyceride Storage by activating plasma lipoprotein lipase. Increasing Glucose transport into cell via GLUT4 transporters and reducing intracellular lipolysis.