EMETICS

These are the drugs which give rise to forced regurgitation (emesis) by which the contents of the stomach get expelled through the oral cavity. Emetics constitute a valuable part of treatment in poisoning cases.

The emetics act either by local irritation of gastric mucosa (e.g., ammonium bicarbonate,

ipecacuanha) or directly on the chemoreceptor trigger zone in the floor of IVth ventricle in medulla (i.e., centrally acting emetics). Although vomiting is primarily considered to be a respiratory function, its ultimate result would cause the evacuation of the stomach. Emetics are sometimes added to cough preparations in low doses to stimulate flow of respiratory tract secretions.

There are certain types of poisoning in which the toxic substances themselves may be able to induce emesis by reflex action. Further, there are other types of poisoning in which poisons may remain in stomach for sometime before entering intestine where they may get absorbed. Before this occurs, emetics are given to patients for physically expelling the toxic substances and reduce the harmful effects and may be able to save a patient's life. When a patient is in unconscious state, emetics may not be very useful and gastric lavage may be required.

There are many substances which are able to induce emesis. Most salts can be able to produce this effect but may be required in large doses. However, there are some bitter tasting salts which can achieve emesis with very small doses. In rare cases, intravenous administration of systemic

emetics may become necessary. In IP., there are no official inorganic compounds used

exclusively as patients.

Examples

i.Copper sulphate

ii.Sodium potassium tartarate

Copper sulphate

Preparation of copper sulfate

100 g of copper (small pieces, turnings, etc.) are added to 100 ml of concentrated sulfuric acid. The flask is heated and if necessary to complete the reaction additional 80 ml of Sulfuric Acid could be added (copper sulfate is obtained also from the residue remaining in the flask in the process of Preparing sulfur dioxide).

This solution is treated with the additional portion of water (in order to fully dissolved copper sulfate), heated and filtered. The filtrate is allowed to Crystallize and obtained copper sulfate as pentahydrate ($CuSO_4 \cdot 5H_2O$) could be additionally purified by recrystallization from water.

Assay of Copper Sulphate by Iodometry

PRINCIPLE:

copper sulphate can be assayed by redox titration [iodometric titration] . copper

sulphate

is made to react with potassium iodide liberate iodide in the presence of acid. in order

to assay $CuSO_4$

it is dissolved in water,treated with potassium iodide in the presence of acid to

liberate iodide. the liberated iodide is treated against standard so

dium thiosulphate solution. the

end point of the reaction can be marked by using starch as an indicator

NOTE:

potassium thio sulphate is added in the assay of $CuSO_4$

because of the formation of cupric

iodidate cuprous iodide and iodine is reversible reac

tion. to prevent the reaction between

cuprous iodide and iodine, potassium thio cynate is added.

$CuSO_4 + 2KI \rightarrow CuI_2 + K_2SO_4$

$2\ CuI_2 \rightarrow 2CuI + I_2$

$CuI + KSCN \rightarrow CuSCN + KI$

$2\ Na_2S_2O_3 + I_2 \rightarrow Na_2S_4O_6 + 2NaI$

PROCEDURE:

Assay of copper sulphate:

Weigh accurately 0.25gms of copper sulphate into a clean iodine flask,

25ml of distilled water was added and approximately 4ml of glacial acetic acid and 10ml of 10% potassium iodide was also added. It was mixed well and kept aside for few minutes. Then the liberated iodine titrated against sodium thio sulphate solution till pale yellow colour was obtained,8-10% of starch indicator and approximately 0.5gms of potassium thio cynate crystal was added. the titrations was continued till bluish violet colour disappears(white colour appears).

Assay of $CuSO_4$ calculated by using IP factor.

Each ml of 0.1N sodium thio sulphate is equivalent to 0.0248gms of $CuSO_4$

COMPOUND	**PRINCIPLE(ASSAY)**
Calcium Carbonate	Complexometric method
Ammonium chloride	Alkalimetry
Sodium Orthophosphate Na_2HPO_4 Sodium bicarbonate ($NaHCO_3$)	Acidimetry Acidimetric method
Aluminum hydroxide $Al(OH)_3$	Complexometric titration with sodium edetate
Potassium permanganate $KMnO_4$	Redox titration method
Hydrogen peroxide (H_2O_2)	Redox titration method
Chlorinated lime Ca (OCl)Cl	Iodometric method
Iodine	Redox method.
Sodium Fluoride	Non-aqueous titration method