FIXED DOSE COMBINATION OF RANITIDINE AND DICYCLOMINE

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ABSTRACT

Ranitidine exhibit competitive inhibition at the parietal cell H2 receptor and suppress basal and meal-stimulated acid secretion in a linear, dose-dependent manner. It is highly selective and dose not affect H1 /H3 receptor. The volume of gastric secretion and the concentration of pepsin are also reduced. Ranitidine reduces acid secretion stimulated by histamine as well as gastrin and cholinomimetic agents through two mechanisms. 1) Histamine released from ECL cells by gastrin or vagal stimulation is blocked from binding to the parietal cell H2 receptor. 2) Direct stimulation of the parietal cell by gastrin or acetylcholine results in diminished acid secretion in the presence of H2 receptor blockade. Dicyclomine is an ant muscarinic, anticholinergic agent. It is nonspecific, local, direct spasmylytic action on the smooth muscle of GIT. This combination is effective in both ulcer and smooth muscle spasm.

KEYWORD: Ranitidine, Dicyclomine.

INTRODUCTION

FDC: It is a formulation of two or more active ingredients combined in a single dose form available in certain fixed dose

Advantages of FDC

1) Reduces inadvertent medication errors.
2) Simpler dosage schedule improves compliances and therefore improve treatment outcomes.
3) Lower packing and shipping cost.
4) Less expensive than single ingredients drugs.
5) Side effect reduced by using one drug combination for this purpose potential for drug abuse can be minimized by using one drug of the combination for this purpose.

Disadvantages of FDC
1) FDC are possible more expensive than separate tablets.
2) Potential quality problem, especially with rifampicin in FDCs for TB, requiring bioavailability testing.
3) Drug interaction may lead to alteration of therapeutic effect.
4) Incompatible pharmacokinetic is irrational because of different elimination ½ lives of individual components.
5) If a patient allergic or has a side effect.

Individual Drug Profile
1) Ranitidine: It is an antagonist of histamine at gastric secretion and gastric acid secretion induced by histamines, pent gastrin and other secretagogues.

Proper name-Ranitidine hydrochloride.
Chemical name-N-{2-[(DIMETHYLLAMINO0-METHYL]-2-FURANYL]METHYL}THIO]ETHYL]-N’METHYL]-2-NITRO-1,1-ETHENEDIAMINE,HYDROCHLORIDE.
Molecular formula-C13H22N4O3S.HCL
Molecular weight-350.87
Route of administration-Oral.

Mechanism of action- Its is an oral drug that block the production of acid by acid producing cells in stomach. Its is an naturally occurring chemical that stimulates the cells in stomach to produced acid. It inhibit the action of histamine on cells, thus reducing production of acid in stomach.

Uses
1) Used to treat the treat ulcer of stomach.
2) Maintenance of healing of erosive esophagitis. Placebo-controlled trials have been carried out for 48weeks.
3) For treatment of Pathological hyper secretary conditions.
Storage: Tablet should be stored at room temperature between 15-30 degree celcius in tightly closed container.

2) **Dicyclomine**: It is an antispasmodic anticholinergic agents. It is an indicated for treatment of functional bowel syndrome.

   **Proper Name**: Dicyclomine  
   **Chemical Name**: \( \text{bicyclohexyl-1carboxylic acid,2-9diethylamino) ethyl sters, hydrochloride.} \)  
   **Molecular Formula**: C19H35NO2HCL  
   **Molecular Weight**: 345.95.

**Description**: It occurs a fine, white, crystalline, odorless powder with a bitter taste. It is soluble in water, freely soluble in water, alcohol, and chloroform and slightly soluble in ether.

**Mode of action**: It is an ant muscarinic, anticholinergic agent, and used to believed that nonspecific, local, direct spasmolytic action on smooth muscle of GIT.

**Precautions**
1) Prostatic hypertrophy  
2) Hyperthyroidism  
3) Hypertension  
4) Coronary heart disease  
5) Cardiac tacchyarrhythmia

**Uses**
1) Nursing mothers  
2) Pediatric use  
3) Geriatric use  
4) Renal impairments  
5) Pregnancy

**CONCLUSION**
Ranitidine used to treat ulcer of stomach and intestines and prevent them from returning .This medication used to treat and prevent certain stomach and throat problems caused by too much stomach acid or a backward flow of stomachic acid into the esophagus reflux diseases.
Maintenance therapy for duodenal ulcer patients at reduced dosage after healing of acute ulcers.

Dicyclomine is indicated for treatment of functional bowels/irritable bowels syndrome. It is an antispasmodic and anticholinergic agent.

Thus, this combination is used to treat to ulcers of stomach and intestines and prevent them from returning after treatment.

REFERENCES
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