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Review Article

Evaluation of antiulcer activity of *Brassica oleracea* in albino rats

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ABSTRACT

Nowadays ulcers are commonly seen in every individual. Ulcers are generally caused by the bacterium known as H.pylori and antacids are used to treat them. But using the drugs for a long time can affect the immune system. The present research addresses the antiulcer activity of cabba ge, scientifically known as *brassica oleracea* and belong to the family *cruciferae*. Brasinine is the active ingredient present in the crucifers which is able to cure ulcers.This study includes extraction of Fresh cabbage juice by a suitable organic solvent i.e. acetone and ,followed by phytochemical screening of extract which gave results as presence of flavanoids, alkaloids,steroids, glycosides e.t.c,. The active constituent in fresh cabbage extract is responsible for antiulcer activity is studied by conducting experiment on rats. Our object is to brings up important questions that are still open, and addresses some significant issues which must be tackled in the future for a better understanding of the behaviour of antiulcer, as well as the risks associated with their occurrence.

Keywords: H.pylori; *Brassica Oleracea;* Brasinine.

INTRODUCTION

Ulcers are the crater-like sores on the mucous membrane caused by the bacterium H.Pylori. There are mainly two approaches to treat stomach ulcers one is reducing the secretion of gastric acids while the second one involves reinforcing the gastric mucosal protection. but conventional treatment have number of complications. long term or high dose administration of drugs often cause many gastric adverse effects which includes small bowel bacterial growth, deficiency of vitamin B_{12} and the risk of *clostridium officle* colitis. Many herbal, natural medicines are available to cure such ailments possibly due to low cost and adverse effects. A great variety of medicinal plants are used either the whole plant or a part of it (root, stem, leaf or flower) are formulated to suitable formulation and administered through orally in case of stomach ulcers. *Brassica oleracea* commonly known as cabbage is a cultivated leafy plant. It is an ancient plant employed as herbal remedy to cure or treat many disorders and diseases like scurvy, arthritis, peptic ulcers, constipation and acne throughout the world. The present study of brassica olercea conducted at laboratory level by inducing gastric and duodenal ulcers in albino rats are listed below.

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MATERIALS AND METHODS

Preparation of Plant Extract

The plant *Brassica oleraceae* was obtained from the Vegetable Garden of anantapur and was identified by G. NAGALAKSHMI of the Department of Botany and Microbiology, at balaji college of pharmacy. Fresh clean leaves of the plant were weighed (1 kg), chopped into bits and refluxed with ¾ of acetone to obtain cabbage extract. The resultant juice was filtered in a funnel to separate the residues and sediments from the juice and thereafter a clean musleen cloth was employed to further sieve the juice to obtain the eventual fine pure cabbage juice used for the study. The extract was concentrated at NMT 40°C, stored airtight in the freezer, as *Brassica oleraceae* extract, until further use and pH of the extract were recorded.

Animals

Healthy albino rats of both sexes purchased from sri venkateshwara enterprises, Bangalore and weighing about 100-150 g respectively were used for the study. All animals were maintained under standard laboratory conditions (temperature 25 ± 2°C) and humidity (55 ± 5 %), with 12 h day: 12 h night cycle. The animals were fed with the normal laboratory diet (A mixed diet of cereals and pulses) and drinking. All the experimental procedures were in strict accordance with Institutional Animal Ethical Committee Guidelines for the care and use of laboratory animals.

Phytochemical Screening

The acetone extract was tested for the presence or absence of secondary metabolites like carote-

noids, alkaloids, fl avonoids, glucocinolates e.t.c. Using standard phytochemical procedures.

Toxicity Test

Acute Toxicity of the plant has been determined using a standardized method. Doses of 300, 600 and 1200 mg / kg were given intraperitoneally (i.p) and up to 1,000 mg / kg administered orally to groups of fasted rats, which were thereafter monitored for behavioural changes, toxic symptoms and mortality.

Antiulcer Activity Study

Ethanol / HCl-induced gastric ulcer (Protective)

After fasting the rats for 18-24hrs six groups of rats (n = 2) were randomly selected and treated with one millilitre of 70 % ethanol in 250 mM HCl was delivered via oral cannula to the stomach of all the 12 rats and each group was treated as follow : Group 1: Distilled water 10 ml / kg, Group 2: FAMOTIDINE 5 mg / kg, Group 3: RANITIDINE 12.5mg / kg, Group 4: *Brassica oleraceae* Extract 300 mg / kg, Group 5: *Brassica oleraceae* Extract 300 mg / kg, Group 6: *Brassica oleraceae* Extract 750 mg/ kg. One hour after gavage, animals were humanely sacrificed soon after 1 h . The stomachs were dissected along the greater curvature and rinsed in normal saline in order to observe and score the lesions produced.

RESULTS AND DISCUSSION

The extract of green cabbage was completely dissolved in distilled water and a pH of 8.5 was recorded

Acute Toxicity

No lethality was produced by I.P administration of *Brassica oleraceae*, except mild sedation and itching, and both of were transient.

Phytochemical Screening

Alkaloids, tannins, cardiac glycosides, flavonoids, phlobatanins, anthraquinones and saponins were identified.

Antiulcer Activity of *Brassica oleraceae* Ethanol / HCl--induced gastric ulcer (Protective)

The herbal preparation yielded a dose-dependent and significant effect when compared with the negative control group. In addition, its effect, especially in doses of 300 and 750 mg / kg, was superior to the standard drugs FAMOTIDINE and RANITIDINE.

DISCUSSION

Knowingly or unknowingly about the medicinal uses of brassica oleracea majoriy of the people use it as spicy vegetable. It didn't produce any toxicity upon administration of acetone extract in rats.the present article shows curative potentials of Brasicca oleracea when employed ethanol/Hcl as ulcerogen in gastric ulcers, . *Brassica oleraceae*, in a dose dependent fashion drug protected against ulcer in both the gastric ulcer models, a higher efficacy was recorded in the acetone model, where the dose of the herbal drug is 750 mg / kg and recorded better than standard drug ranitidine and famotidine.further studies with other extracts are still in study.

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