REVIEW ARTICLE

EVALUATION OF ANTIULCER ACTIVITY OF METHANOLIC LEAF EXTRACTS OF FICUS RACEMOSA LINN

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ABSTRACT

The present study is aimed at investigating the anti-ulcer activity of *ficus racemosa* leaves methanol extract against ethanol induced ulcer in albino rats. Anti ulcer activity was evaluated by measuring the ulcer index and percentage of ulcer incidence. The standard drug and the extract at 500mg/kg has shown almost similar action as that of Omeprazole should be replaced with the standard drug and the extract at 1000 mg/kg has shown almost similar action as that of Omeprazole

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INTRODUCTION

Peptic ulcer and related acid peptic diseases affect up to 10 percent of the Population with sufficient severity to prompt victims to seek medical attention. The most Significant disorders requiring medical attention are peptic ulcer and gastro esophageal Reflux disease (Burks, 7995). In the US, approximately 4 million people have peptic ulcer (duodenal and gastric), and 3,50,000 new cases are diagnosed each year, around 1,80,000 patients Are hospitalized yearly, and about 5000 people die each year as a result of peptic ulcer Disease. The lifetime likelihood of developing a peptic ulcer is about 10% for Americans

Males and 4% for females (Abbas and Fausto 2004)

Peptic ulcers are relapsing lesions that are most often diagnosed in middle-aged to Elder adults, but they may first become evident in young adult life. They often appear Without obvious precipitating conditions and May then, after a period of weeks to months. Of active disease, heal with or without therapy. Even with healing, however, the tendency To develop peptic ulcers remains, in part because of recurrent infections with *H. Pylori*. Although it is difficult to obtain estimates of the prevalence of active disease, autopsy Studies and population surveys indicate a prevalence of 6% to 14% for men and 2% to 6% for women.

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The male to female ratio for duodenal ulcers is about 3:1, and for gastric Ulcers about 1.5 to 2.1

Many plant secondary metabolites act as potent antioxidants. Natural antioxidant. Defense have shown that the free radical scavenger/antioxidant such as SOD, catalase, Vitamin E, vitamin C, vitamin A, Glutathione reduce the mucosal injury induced by different mediators (Sharma and Gupta 1997). Worldwide interest in natural products as preventive and therapeutic agents has led to a greater appreciation of the rich heritage of traditional systems of medicine.

MATERIALS AND METHODS

Collection and preparation of extract

The plant materials used in this study were plant of ficus racemosa *leaves* collected, identified and authenticated. The plant (3 kg) was chopped in to small pieces and dried in tray drier under controlled conditions. Air-dried ficus racemosa (1000g) was powdered and extracted by maceration for 18 hours with 1lit volumes of methanolic extract and mixture was boiled of 3 hours and filtered to get extract.

Animals used:

Rats (150-180gm) were used for this study

They were kept in the departmental animal house at 262°C

and relative humidity 44 –56 %, light and dark cycles of 10 and 14 h respectively for 1 week before and during the experiment for acclimatization. The animals were provided with standard rodent pellet diet and the food was withdrawn 18-24 h before the experiment, though water was allowed *ad libitum*. All experiments were performed in the morning according to current guidelines for the care of laboratory animals and the ethical guidelines for investigations of experimental pain in conscious animals.

ANTIULCER STUDIES

Ethanol-induced ulcer

Rats were deprived of food 18 hours prior to the experiment but are allowed free access to water. During this time they are kept in restraining cages to prevent coprophagy. The rats are administered either are appropriate vehicle or the cytoprotective drugs, orally 30 Minutes prior to administration of 1 ml absolute ethanol. Untreated animals are included. As controls. One hour after administration of ethanol, the animals are sacrificed by Cervical dislocation and their stomachs exercised, cut along the greater curvature and Gently rinsed under tap water. The stomachs are stretched on a piece of foam core mat, Mucosal site up. The subjective scores of the treated tissues are recorded by measuring Length and width of lesions. The sum of length and width (mm) of all lesions for each

Stomach was used to calculate ulcer index Hollander *et al.,* 1985; Andrade *et al.,* 2007) .

Ulcer Scoring

After sacrificing the rat, stomach was removed and opened along the greater curvature, and washed it slowly under running tap water. Put it on the glass slide and observe under 10X magnification for ulcer. Score the ulcers as below.

0 = normal colored stomach
0.5 = red colouration
1 = spot ulcers
1.5 = haemorrhagic streaks
2 = Ulcers ≥ 3 but ≤ 5
3 = Ulcers >5

Mean ulcer score for each animal is expressed as Ulcer Index.
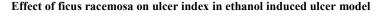
Macroscopical view of rat stomach

After mounting the rat stomach on glass slide and observed in 10x magnification, different scores were noted in each groups. The mean ulcer score represents the ulcer index. The scores on each group were compared, ie group I with group II, III and IV. It was noticed that Group II and IV shows similarity in the score as that of group III.
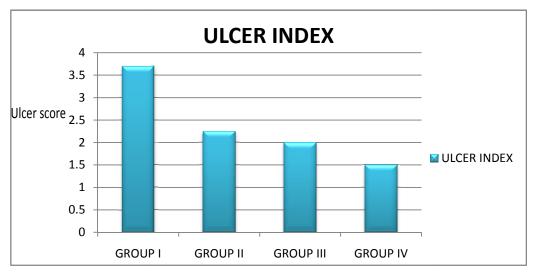
RESULTS

Effect of ficus racemosa on ulcer index and percentage of protection in ethanol induced ulcer model

Groups	Body wt of rats	Drugs given	Ulcer index	% Protection
GROUP I	165.5 ± 0.5	Ethanol + CMC	3.7±1	-
GROUP II	162.7 ± 0.9	Omeprazole + Ethanol	2.2±1	98
GROUP III	170.5 ± 1	Ficus racemosa(500mg/kg)+ Ethanol	2±1	98.2
GROUP IV	160.7 ± 0.9	Ficus racemosa (1000mg/kg) +Ethanol	1.5±0.2	98.8

Values are expressed in terms of mean ± SEM of 5 rats (ANOVA) P values: *< 0.001 - Highly significant **<0.05 - Significant N S: Non Significant

Effect of ficus racemosa on ulcer index in ethanol induced ulcer model

Macroscopic appearance of the gastric mucosa in ethanol induced ulcer models

Group I (Ethanol)

Group II (Omeprazole)

Group III (Plant extract 500mg/kg)

Group IV (Plant extract 1000mg/kg)

Conclusion

The present investigation showed that the extract of *Ficus racemosa leaves* showed potent antiulcer activity. Futher studies needed for the isolation an active compound and it exact meachnism of action of methanolic extract of *Ficus racemosa* and determine the possible mechanism of actions of *Ficus racemosa* and their potential for clinical use needs to be demonstrated in clinical trials

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