



Gastrointestinal Protective Effect of Zizyphus Lotus (L) Wild Leaf Extract Against Indomethacin and HCl-EtOH Induced Ulcers

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Abstract

The presence of plant material in the ethanol part of Zizyphus Lotus (L) has antibacterial properties against ulcers caused by indomethacin and HCl-EtOH. The plant root powder is extracted with ethanol, respectively. The extract has a strong odor. It refers to major phytochemicals such as flavonoids, tannins, and phenols. According to all side tests of each extract, further spectroscopic characterization of ethanol extracts for flavonoid isolation was subject to further pharmaceutical scrutiny as only ethanol extracts and saponins were available. An allergy study of Z. Lotus has shown that all extracts from this plant are safe and non-toxic. Therefore, graphs of future relationships between commonly used phytochemical properties and pharmacological properties need to be modeled.

Key-Words: *Zizyphus Lotus*, Anti-Ulcer, Isolate Fraction

Introduction

Herbal promotion has reached breaking point and the dangers of “plants” work toward the end of the drug review. The pharmacological analysis of plants is an important aspect of herbs and provides important safety considerations when using herbs in clinical trials. Safety, power, economic growth and affordability are the most important criteria to justify an application. In general, plants have been used in folk medicine since ancient times for the treatment and prevention of various human diseases [1,2]. Among medicinal plants, jujube, which belongs to the Reindeer family, is widely used in folk medicine to treat and reduce health problems [2, 3, 4, 5]. Today's practice is part of providing ample scientific evidence to support this herb's hidden potential. Many published studies, often examining the use of various tests, based on knowledge, limitations and research on the resistance of this plant to EA disease show that extracts from different parts of Z. lotus perform important functions in the oil. found as an antioxidant. , antibacterial, hepato-

renal protective, lipid-lowering, anti-inflammatory, analgesic and antiproliferative effects [6-13]. Toxicological studies of Z. lotus extracts show that this plant poses no toxicity risk [13,14]. The current study is only part of providing sufficient scientific evidence to support this herb's hidden potential. Based on the available information, the isolation and testing of this plant for resistance to EA disease is usually performed using a variety of screening methods.

Phytoconstituents present in Zizyphus Lotus

Lotus fruits and lotus leaves contain 22 different phenolic compounds, including gallic acid, pyrogallol, chlorogenic acid, catechin, rutin, paraben, caffeic acid, vanillic acid, epicatechin, syringic acid, p-coumaric acid, 3-hydroxycinnamic acid, and ferulic acid. It consists of mountain. . mountain. synaptic acid, salicylic acid, rosmarinic acid, resveratrol, quercetin, naringin, catechol, hydroxyl thyroxine, and naringenin [12,13]

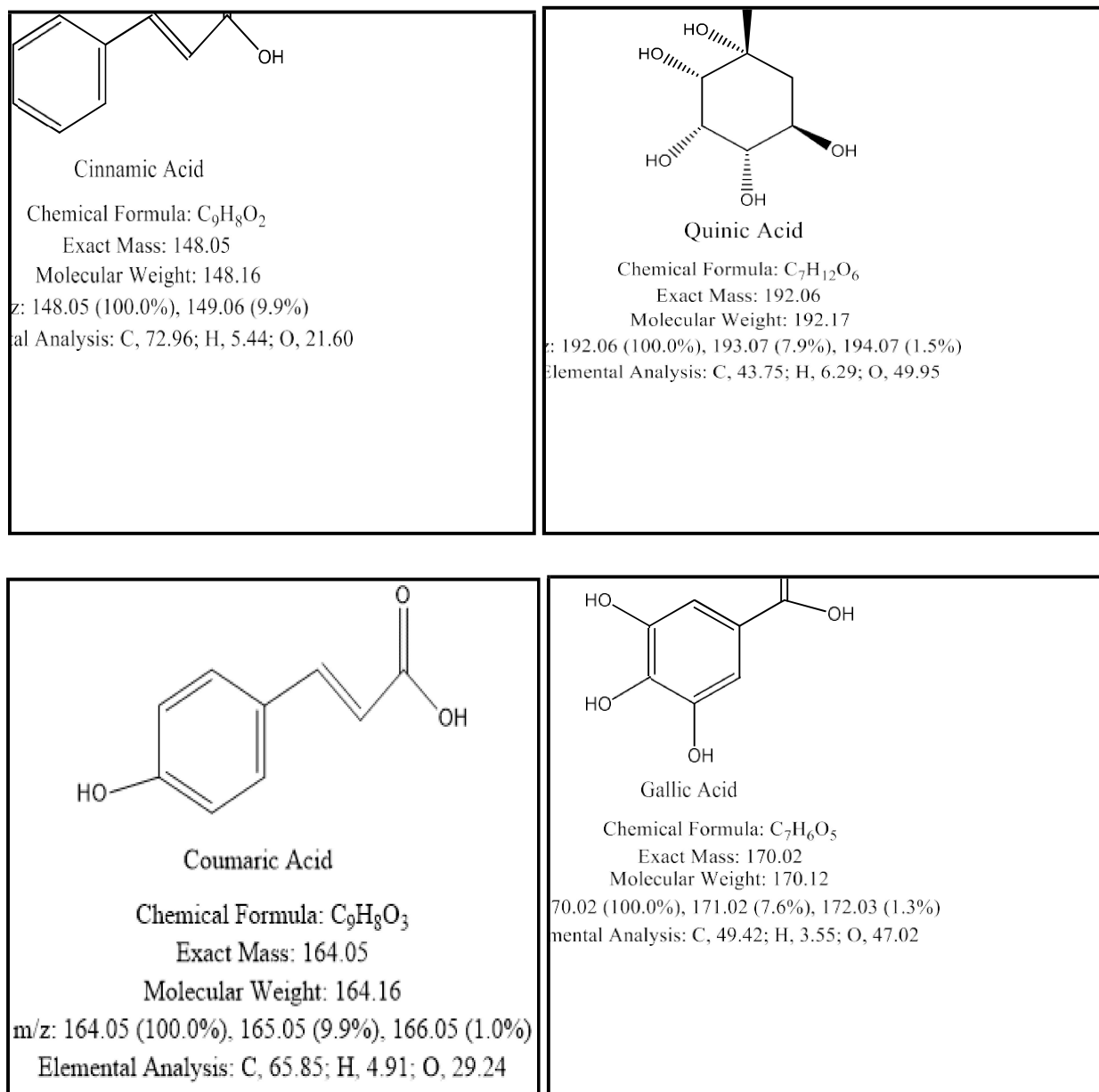


Fig.1 Various Chemical phytoconstituents present in plant Zizyphus Lotus (L)

Material and Methods

Chemical and Plant material

Plant *Zizyphus Lotus* leaves were collected from near from the college campus, Bhopal (M.P.) India in the months of March to April 2010. The herb (Leaves) was authenticated from the Department of Botany, Dr. H. S. Gour

Vishwavidyalaya, Sagar (M.P.) (Herbarium no. Bot/413). The entire chemical was analytical grade used.

Sample Preparation

The plant jujube lotus leaves are thoroughly washed with tap water, then rinsed with a little distilled water, and dried in the shade for 7 days. Use a kitchen mixer to make a fine powder from the dried herb. Keep the herb powder under the dryer for further work.

Extraction of flavonoids

The pomace is then extracted with Soxhlet petroleum ether. The extraction takes 5-6 days to complete. The extract was concentrated and dried to a constant weight. Measure the physical properties of the dried product such as consistency, color, odor, and taste. Contains important phytochemicals i.e. Flavonoids, tannins, and saponins.

Pharmacological Screening

Antiulcer (Peptic ulcer)

Ethanol extracts were obtained from early phytochemical studies. Dates contain many flavonoids, such as quercetin, and Co-TLC indicating that they also contain rutin. These observations formed the basis for the selection of clinical evidence. For clinical trials, ethanol extracts, ethyl acetate fractions, and isolates were used for comparison between them. This is also considered a requirement for further phytochemical analysis of this plant due to better isolation of active ingredients [17].

Antiulcer Activity

Drugs and chemicals

Ranitidine (150 mg) tablet, from Zintac Pharmaceuticals Laboratories, India was used as a reference drug in all the animal models studied. Rests of the chemicals used for the study were used from the institutional chemical house purchasing all chemicals from Loba, Merk Pharma, etc.

Administration of the extracts and fractions

Suspensions of ethanolic extract, ethyl acetate and ppt. fractions were prepared in distilled water using Tween-80 (0.2% v/v) as the suspending agent. Control groups were given only the vehicle (0.2% v/v Tween-80 solution) in volume equivalent to that of the plant extracts and fractions.[16]

Screening Models for the Assessment of Antiulcer Activity

Gastric lesions induced by HCl/ethanol [18]

Antibacterial activity in gastric ulcers of isolated fractions of ethanol extracts, ethyl acetate, and Zizyphus Lotus in 150 mM HCl/EtOH with minor changes. Mice were divided into several groups; 6 animals per group and fast for 24 hours. Before taking orally normal saline (NaCl 9%, 5 ml/kg), ethanol extract, ethyl acetate, and separate portions (200 (extract), 50 (portion) mg/kg). Another group took ranitidine (150 mg/kg, p.o) as a reference. One hour later, each group was given 1 ml of 150

mM HCl/EtOH (40:60, v/v) solution to induce stomach pain. Animals were killed for 4 hours. After ulcer treatment, their stomachs were

excised and cut along the right crease, washed, and stretched on cork boards. Examine the damaged area and assess the damage.

Calculation of Ulcer index (UI) and percent inhibition (% I)

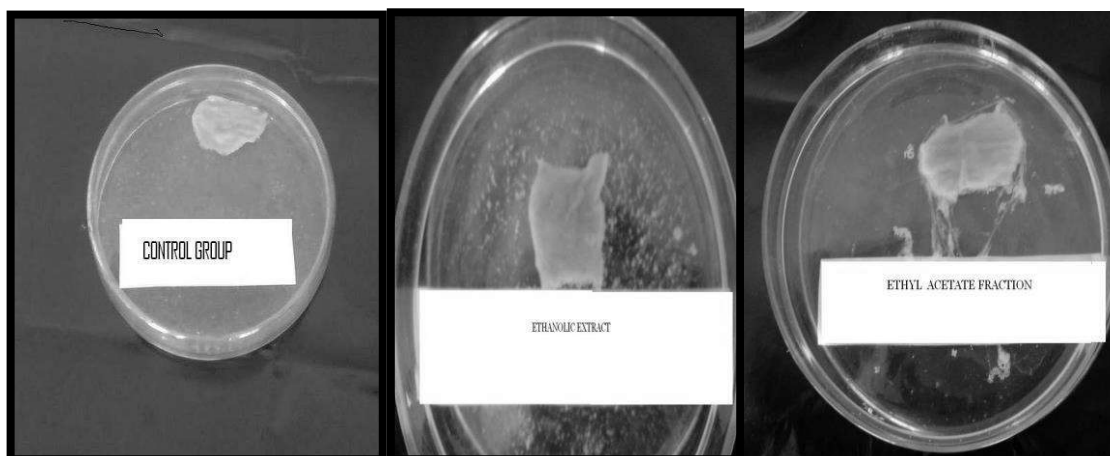
➤ **Ulcer Index (UI)** =
$$\frac{\text{Number of ulcer in control} - \text{Number of ulcer in test}}{\text{Number of animals}}$$

➤ **Percent Inhibition (% I)** =
$$\frac{\text{UI of control} - \text{UI of test}}{\text{UI of control}}$$

Statistics

The ulcer index and percent inhibition; Statistical analysis was performed by one-way analysis of variance (ANOVA) followed by

Dunnett's t-test for multiple comparisons. The significance of difference was accepted at $p < 0.05$. Analyses were performed using the software SPSS version 13 for windows



1. Control Group

2. Ethanollic Extract

3. EthylAcetateFraction



4.Isolated Fraction

5.Standard Fraction

6.Standard Fraction

Fig.2 HCl/Ethanol-induced ulceration of stomach surface and their response

Observation and Results:

Table 1: HCl/Ethanol induced ulceration

Group no.	Treatment	Dose mg/kg	UI	% I
I	Control	-	66.21±1.40	-
II	Eth. extract	200	25.44±3.30**	68 %
III	Ethyl acetate fraction	50	29.98±0.53**	53 %
IV	Isolate fraction	50	4.00±0.54	95 %
V	Ranitidine	150	2.94±2.03	97 %

Data are expressed as mean± S.E.M. (n = 6), **p < 0.01; ns: not significant vs. control.

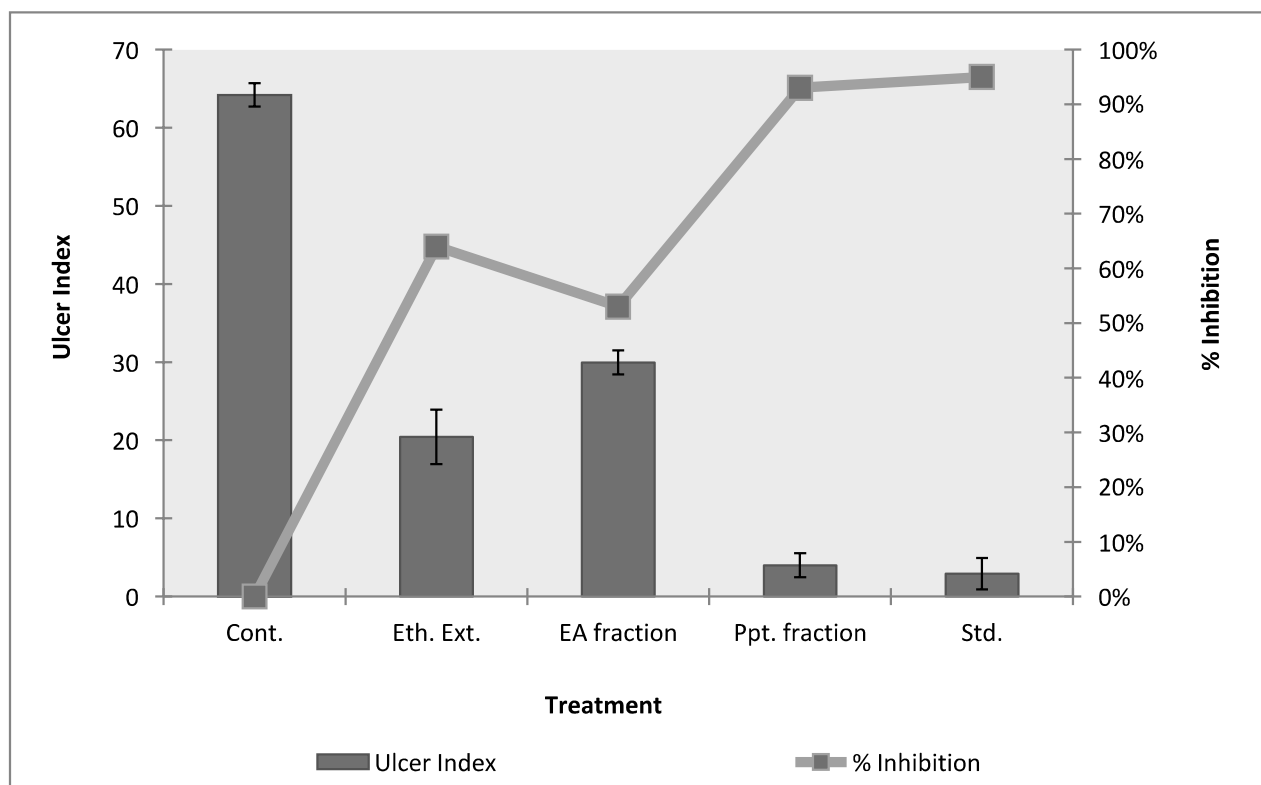


Fig.3: Bar Graph of HCL/Eth. Induced ulcer

Basic anatomy of the stomach

The stomach is a large sac located in the peritoneal cavity between the esophagus and the intestine. It has a heart chamber (takes the esophagus), a dome-shaped fundus, body, or corpus; and a funnel-shaped pylorus. The mucosal surface is lined with simple columnar epithelial cells. When the stomach is empty, there is a transparent mucous layer called the rugae and submucosal folds on its surface. The folds disappear when the stomach swells with food, and they also form deep grooves along the curvature of the fundus, the minor and major curvature of the stomach, and towards the pyloric stomach. This layer has many pits lined with indentations of deep epithelial glands called gastric glands. The simple columnar epithelium lining the gastric mucosa consists of several types of exocrine and endocrine cells and rests on the basement membrane. Slipping of the muscularis mucosa can interfere with the tumor, and contraction of this muscle helps colon cancer to spread through the bladder. The stomach of the mice was examined histologically, and then a picture 10 (mp) was taken to confirm the cytoprotective activity of the studied drug. Figure 2 shows a picture of an open mouse stomach.

Gastric lesions induced by HCl/ethanol

This study was carried out using EA and two parts of leaves which are separate parts and ethanol extract. Protection against peptic ulcer is demonstrated by calculating anal index and percent inhibition. 500 mg/kg body weight acute pain extract; It showed 68% ulcer inhibition (1%) and intestinal inflammation (UI) was $25.44 \pm 3.39^{**}$ ($p < 0.01$) compared to control with UI 66.21 ± 1.40 . EA most treated animals showed a good response, but not better compared to the treatment group, with a mean UI of $20.44 \pm 3.49^{**}$ ($p < 0.01$) and EA % of the dose (50 mg./kg) found. content is 53%. ppt user interface and% I. This score is very good compared to standard medicine. ppt interface. Most (50 mg/kg) were $4.00 \pm 0.54^{**}$ ($p < 0.01$), and the percent inhibition achieved is 95%, which is very close to the clinical standard. Standard ranitidine given at an acute dose of 100 mg/kg showed 97% inhibition and UI 2.94 ± 2.03 . These results showed that isolate was the most effective compared to other phytopharmaceutical treatments.(Table 1 and Figure 2)

Histological results

A histological examination of the stomach was performed to examine the resistance of each drug. After the intestines of all animals in both samples were excised, they were examined for epithelial damage and erosion. Several regions of the stomach were examined, and animals

treated with both the isolation model (50 mg/kg) and the model showed few lesions and were not severe compared to the control. The number and weight of lesions were lower in animals treated with ethanol extract (500 mg/kg) compared to animals treated with control and ethyl acetate (50 mg/kg), respectively. Histopathological results clearly showed that Isolate was best preserved after standard ranitidine (150 mg/kg).(Figure 2)

Result and Discussion

Obviously, these plants can be used very well. The present study opens the door for the study of this plant from phytochemical and pharmacological aspects. Previous studies have shown that this herb contains many types of flavonoids. In general, the etiology of ulceration is unknown and is generally believed to be the result of an imbalance in the severity and maintenance of mucosal integrity by endogenous defense mechanisms. For bacterial production, ethanol is used for control because it enters the gastric mucosa easily and quickly.

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Some flavonoid derivatives such as genistein, hesperidin, hesperetin, teristerone, cabreuvin and their metabolites have anti-H. pylori activity has been reported in several studies. Based on the present results, we can assume that this plant may be resistant to diseases due to one or more mechanisms. Consequently, the anti-ulcer effect of this drug may be due, as mentioned earlier, to the flavonoids' action to scavenge free radicals, since the catechol core causes a reduction in the production of free radicals.

Conclusion

These findings suggest that the antiulcer activity of Z. Lotus may be partially mediated by its antacid and sedative properties. Therefore, the presence of flavonoids and tannins in the ethanol extract of the leaves may explain the antisecretory and cytoprotective activities. As a result, the anti-inflammatory effect shown in this study supports the use of this plant in the treatment of stomach and intestinal disorders in future studies.

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