

EVALUATION OF ANTIULCER ACTIVITY OF *CURCUMA AMADA*

¹Singh B, ²Bharti M

^{1,2}School of Life Sciences, RR Group of Institution, Lucknow, UP, India.

*Corresponding Author: Bhawna Singh

Email ID: sbcbc786@gmail.com

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ABSTRACT

Curcuma amada, a plant is by and large spread in Sri-Lanka and India. The leaves of the plant have been analyzed in prevention of ulcer anyway the antiulcer activity of rhizomes new crush had been once in a while considered. Thusly the purpose of the examination is choosing this impact from the new crush of *curcuma amada* rhizomes. Foundation screening of phytochemical of entire plant dispenses with show in vicinity of alkaloid, flavonoid, terpenoids tannins, may take cell backing and adversarial to ulceration capacity. The antiulcer sway is screened in new crush of rhizome of *curcuma amada* on ethanol and ibuprofen provoked time and bit subordinate ulcer study.

Keywords: Alkaloid, Flavonoid, Terpenoids Tannins, *Curcuma amada*.

INTRODUCTION

Peptic ulcer just as other acidic indications influence up to 10 percent of individuals with enough seriousness to empower casualties to look for clinical consideration. The more serious ailment requiring clinical focus is ulcer and gastroesophageal disease [1]. Around 4 million individuals in the US have peptic ulcer and many new patients are analyzed every year, approximately 170 thousand individuals are introduced to the emergency clinic and treated with drugs every year, and almost 5 thousand patients pass on every year from ulcer. Human life expectancy having a peptic ulcer is around 10 rate focuses for Americans guys and four rate focuses for females [2]. Peptic ulcers are injured in injuries which are most generally influenced in the number of inhabitants in more youthful to more established individuals, despite the fact that this can be recognized in grown-up life. In some cases they happen with no clear sign and impact, following a time of days to long periods of dynamic illness measure, it can recoup with or without medicate treatment. This likewise influences from bacterial H diseases [3].

Ulcer Impact:

Blood coming out: Seeping of the UGI is the auxiliary regular ailment causing high mortality in peptic ulcer [4]. Hematemesis (heaving with processed food or espresso ground like substance) and dark, delay stools are ordinarily present in the UGI. Nasogastric tube lavage Clinical analysis of UGI demonstrates blood or espresso ground as material nearness. This finding may anyway be negative if the draining happens past a shut pylorus locale [5]. The majority of the patient with draining ulcers can be treated with revival of the liquid and blood, sedate treatment and endoscopic medical procedure.

Perforation: This ulcer may distribute to the small intestine, accounting for 60, 20 and 20 percent of indentations in the esophagus and small intestines ulcers [6].

Obstruction: Obstruction of the gastric wall among the common symptoms of ulcers. Most cases involve intestinal ulceration that is 5 % of the patient population [6].

Alteration in lifestyle:

Headache medicine and connected medications [6], alcohol [7], coffee [8] and tea [10] may meddle with peptic ulcer treatment. Smoking can likewise impede the system of ulcer cure [11]. Men with ulcers manifestations had been resolved to have sugar than men without ulcer [12], hereditary defenselessness to ulcer pathogenesis may emerge through this route [13]. Sugar has additionally been accounted for to expand stomach pH [14]. Salt may make aggravation the stomach and digestive tract. Huge salt admissions have been related with expanded danger of stomach ulcer [15].

MATERIALS AND METHODOLOGY**Chemicals**

The entirety of the synthetic substances and reagents utilized in the examination were of explanatory quality, and were gathered from legitimate Indian providers .

Selection & plant authentication

Curcuma amada was taken from the CIMAP in Lucknow of India. The dried whole plant

powder of *Curcuma amada* was supplied

Phytochemical screening:

The plant might be including the accompanying synthetic compounds like protein, starch, and lipids. That is utilized as food by individuals. It additionally incorporates the synthetic concoctions, for example, Tannins, glycosides, alkaloids, Volatiles oils. The exacerbate that assume pivotal job for bunches of therapeutic properties.

Carbohydrates test (Molish test):

The powdered of model was consolidated with 1 ml of alpha naphthol game plan close by concSulphuric destructive course of action in the test tube blushing concealing was made at the crossing point between 2 liquid this is shows the closeness of sugar.

Alkaloids test

For the small amount of stored powder (sample) were taken and a few drops of hydrochloric acid were applied and filtered. The filtered one was checked with various alkaloid agents,

Mayer's reagents:

Apply modest quantities of Mayer 's reagent to a modest quantity of above channel to shape cream accelerate. This demonstrates alkaloids are available.

Flavonoids test

Apply 5 ml of depleted alkali solution to extract tank from the plant and start by adding concentrated corrosive sulphuric. It forms yellow, a shading. It indicates removal demonstrated association with flavonoid.

Steroids test (Salkowaski test)

Few plant extracts have been combined with chloroform, and the same amount of sulphuric acid has been added. The chloroform layer got cherry red color. It means the sample contains hormones.

Tannins

With vanillin hydrochloric acid reagent is prepared from only a few amounts of plant extract. Because of the formation of phloroglucinol it produces, pink or red colour, suggesting the presence of tannins

Protein test (Mellon's reagents):

Mellon's reagents (mercuric nitrate in nitric corrosive with a hint of corrosive nitrous) usually yield white opportunities for expansion into a protein structure that turns red on heating.

Pharmacological screening:**Animals:**

The pale skinned person rodent (normal body weight 200-300g),used from in house research center. The creatures were kept up under normalized natural conditions (22-28oC , 60-70% relative moistness, 12 hr dull/light cycle) in creature house, Department of pharmacology, RVS College of Pharmaceutical Sciences, sulur, Coimbatore. The creatures were given standard mouse chow and water not obligatory.

RESULTS AND DISCUSSION**Preliminary screening of phyto chemical:**

Rhizome of *Curcuma amada* juice was oppressed different substance tried according to the standard strategies for the ID of the different constituents. The outcome if this phyto compound investigation is recorded underneath.

Table 1- Screening of Phyto chemical of *curcuma amada* rhizome juice

| CONSTITUENT OF PLANT | INFERENCE | | | |
|--------------------------|-----------|----------|---------|------------|
| | Acetone | Methanol | Ethanol | Chloroform |
| Alkaloids | + | + | + | - |
| Carbohydrate | + | + | + | + |
| fixed oil | + | + | + | - |
| Flavonoids | + | + | + | + |
| Glycosides | + | + | + | + |
| Proteins and amino acids | - | - | - | - |
| Tannins | + | + | + | - |

Study of pharmacology studies on acute**toxicity:**

Table 6 shows the subordinate impact portion of FJCA. The antiulcer effect of new curcuma amada squeeze (FJCA) has been found to have increased with portions expanding. The most extreme consequence was seen at 2ml

kg⁻¹ weight of body to ethanol Administration resulted in severe erosions.

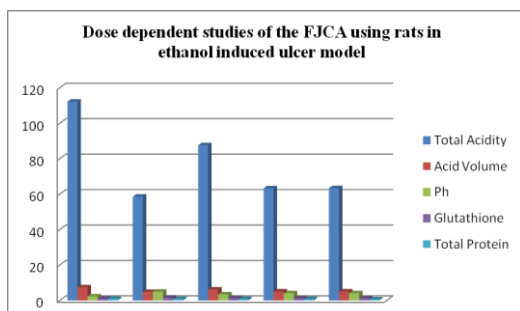
Table 6- Dose based studies of FJCA

employing ethanol triggered ulcer rat model

| Treatment | Animal No | Concentration | Index of Ulcer | Acidity (mEq/L) | Volume of Acid (ml) | pH |
|-----------------|-----------|---------------|----------------|-----------------|---------------------|-------------|
| Control (water) | 6 | - | 10.80±0.30 | 110.1±1.13 | 7.30±0.21 | 3.2±0.10 |
| Pantoprazole | 6 | 1.5mg/kg | 5.80±0.42** | 56.5±0.84** | 4.79±0.33** | 9.9±0.16** |
| FJCA | 6 | 1.5ml/Kg | 7.50±0.028 | 90.5±0.22* | 6.25±0.11* | 7.32±3.05 |
| FJCA | 6 | 2ml/Kg | 5.90±0.04* | 67.2±0.516* | 5.03±0.09* | 5.05±4.77** |

Nonetheless, the FJCA diminishes the seriousness and occurrence of gastric disintegrations in C₂H₅OH treated creatures. Ulcer record of gathering I creatures that filled in as water as control was 11.85±0.30. The ulcer file for bunch III (100mg/kg), bunch IV (200mg/kg) and gathering V (400mg/kg) was 8.55±0.28, 5.39±0.21, 1.84±0.11 individually. the reference standard (bunch II), Pantoprazole, had ulcer record 4.80±0.42 as appeared in Table

Figure 11- Dose relay work of the FJCA employing rats in ethanol triggered model of ulcer.



FJCA suggested a decrease in overall acidity in all portions evaluated when contrasted and regulated as expressed by the absolute estimates of causticity. Gathering I absolute causticity which filled in as control (water)

was 112.1±1.13. The overall causticity of gathering III (1.5ml / kg), bunch IV (2ml / kg) and gathering V (4ml / kg) was 87.5±0.22, 63.2±0.516, 63.3±0.21 respectively, as shown in Table 6. pantoprazole, the reference norm (bunch II) had all 58.5±0.84 corrosivity, as shown in Table 1.

The acidic volume of gastric emissions from collecting I creatures which filled in as control (water) was 7.33±0.21 and 6.05±0.11, 5.05±0.09, 5.02±0.04 separately in bunch III (1.5ml / kg), bunch IV (2ml / kg), bunch V (4ml / kg). The regular II set (pantoprazole) treated had a corrosive volume of 4.73±0.33, as shown in Table 7. Gathering I stomach discharge pH was 2.2±0.10 and in bunch III (1.5ml / kg), bunch IV (2ml / kg), bunch V (4ml / kg) was 3.32±3.07, 4.05±4.77 and 4.02±3.33 respectively. The regular set II (pantoprazole) treated had a pH of 4.9±0.16, as shown in Table 6.

Because glutathione is personally linked to avoiding gastric disintegrations. Gaging glutathione in charge and handling mice, bunch I creatures that filled in as control had gutathione level 0.92±0.012 was thought beneficial. The glutathione amount was 1.20±0.012, 1.10±0.094, 1.11±0.024 separately in bunch III (1.5ml / kg), bunch IV (2ml / kg), bunch V (1.5ml / kg).

It indicated ascending in protein content in the benchmark community while pretreatment with FJCA was seen as decreasing the protein content at various portion levels. At the same time, the protein content in collecting treated with pantoprazole dropped. The Gathering I absolute protein substance that provided power was 0.853 ± 0.02 . The actual protein content of bunch III (100mg / kg 0.5ml/100gm), bunch IV (100mg / kg 1.0ml/100gm), bunch V (100mg / kg 2.0ml/100gm) was 0.721 ± 0.09 , 0.532 ± 0.05 and 0.555 ± 0.02 . Aspirin Induced Model

Table 7 shows subordinate FJCA effect section. The antiulcer effect of new curcuma amada squeeze (FJCA) has been found to have increased with portions expanding. At 200mg / kg body weight for was seen the biggest impact. Organizing ibuprofen caused severe disintegration. Nevertheless, the FJCA diminishes the magnitude and frequency of gastric disintegrations in creatures treated with ethanol. The ulcer of collecting I creatures that filled in as control (water) was 10.80 ± 0.30 .

The bunch III (100mg / kg), bunch IV (200mg / kg) and collecting V ulcer record (500mg kg^{-1}) was 6.10 ± 0.24 , 2.09 ± 0.25 , 2.15 ± 0.11 orderly

.the reference standard (second group), pantoprazole had index of ulcer 4.30 ± 0.42 as isplayed in table [7].

Time dependent studies:

Ethanol Induced Model using albino rats in ethanol induced ulcermodels

FJCA-fresh juice of *curcuma amada*

** $P < 0.001$, * $P < 0.05$, compared with control.

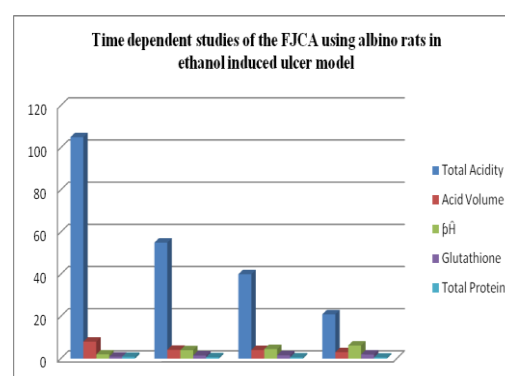


Figure 12- Time dependent studies of the FJCA using albino rats in ethanol induced ulcer model.

Time subordinate impact (15 days) of FJCA is appeared in table 7 At portion of 2ml/kg body weight it had indicated that time subordinate organization diminishes the ulcer list. The ulcer record of gathering I creatures which filled in as control (water) was 11.3 ± 0.42 . pantoprazole, the reference standard (bunch II) had ulcer list of 4.75 ± 0.48 .

The total acidity was 105.00 ± 3.13 for group I animals that served as monitor. Community III gross acidity was at 59 ± 0.45 . Pantoprazole had a total acidity of 55 ± 0.365 by reference norm.

The acid volume of group I animal gastric secretion which served as control was 8.01 ± 0.41 and 4.08 ± 0.08 in group III. Treated pantoprazole had a volume of 4.18 ± 0.23 acids.

The pH of group I animal gastric secretion that acted as control was 2 ± 0.06 , and 4 ± 0.05 in group III. The normal reference (treated pantoprazole) had the pH 4.19 ± 0.02 . The glutathione content was 0.89 ± 0.01 for group I animals which served as control. Group III glutathione content was 1.60 ± 0.03 . The reference norm (treated pantoprazole) was 1.45 ± 0.66 .

The total Group I protein content that acted as regulation was 0.809 ± 0.08 . Community III total protein content stood at 0.532 ± 0.02 . Normal pantoprazole had total protein content of 0.615 ± 0.06 . It had been shown at a dosage of 200mg / kg body weight that (30 days) time-dependent administration reduces the index of ulcer more than (15 days) time-dependent administration. The

ulcer index was 11.6 ± 0.30 for group IV animals that acted as control (water). In group VI the ulcer index values were 2.74 ± 0.18 . Reference standard pantoprazole (group V) had an ulcer index of 0.50 ± 0.08 .

Total group IV animal acidity that acted as control (water) was 102.44. In Group VI the total acidity values were 54.5 ± 0.22 . The reference norm (Group V) for pantoprazole had an ulcer index of 49 ± 0.22 .

The volume of acid from group IV animals that acted as control (water) was 4.53 ± 0.06 . The pH of group IV animals which served as control (water) was 1.9 ± 0.09 . The pH values in group VI was 4.32 ± 0.02 . Pantoprazole, the reference standard (group V) had ulcer index of 4.50 ± 0.06 .

The glutathione of gathering IV creatures which filled in as control (water) was 0.93 ± 0.01 . Glutathione level in bunch VI was 1.80 ± 0.09 . The reference standard pantoprazole, (bunch V) has ulcer record of 1.50 ± 0.02 .

CONCLUSION

curcumaamada, a plant is by and large spread in Sri-Lanka and India. The leaves of the plant have been analyzed in prevention of ulcer anyway the antiulcer activity of rhizomes new crush had been once in a while considered. Thusly the purpose of the examination is choosing this impact from the new crush of *curcuma amadarhizomes*.

Foundation screening of phytochemical of entire plant dispenses with show in vicinity of alkaloid, flavonoid, terpenoid stannins, may take cell backing and adversarial to ulceration capacity. The antiulcer sway is screened in new crush of rhizome of *curcuma amada* on ethanol and ibuprofen provoked time and bit subordinate ulcer study. The outcome get from this assessment had been displayed that new crush of *curcuma amadarhizome* show antiulcer sway, ibuprofen affected ulcer models. In cerebral pain medication impelled model, there is decline in ulcer record, outright destructiveness, complete volume of gastric substance, full scale protein center and higher centralization of glutathione substance and gastric pH emanation they

differentiated and treated assembling pantoprazole utilized as a standard correlation specialists. Pantoprazole, that used as a blocker of proton pump, substantially decreases about 90 percent of basal, based on food & hormonal gastric acid, that is caused by gastrin, drug for parasympathomimetic.

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