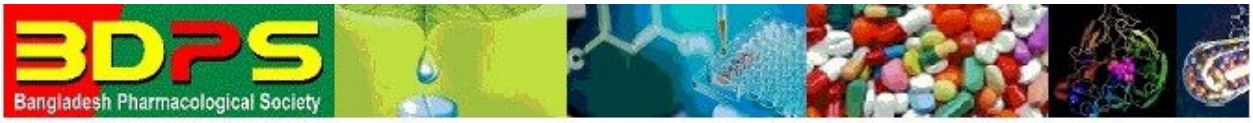

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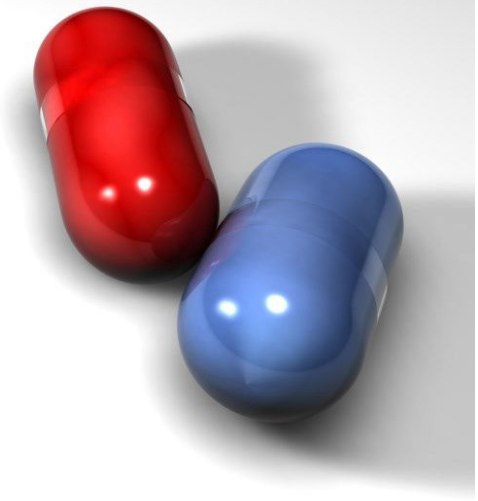

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Letter to the Editor

Antiulcer activity of hydroalcoholic extract of *Ipomoea staphylina* plant in rats

Sir,

Peptic ulcers are a deep gastrointestinal erosion disorder. It is due to various factors such as smoke, antiinflammatory drugs, alcohol, stress, fatty foods, *Helicobacter pylori* infections triggered tissue necrosis, free radical generation, decreased mucus/bicarbonate secretion and cessation of nutrient delivery, etc. Hydrochloric acid together with pepsin are responsible for maintaining the lesion once it is produced (Wallace and Granger, 1996).

There are different drugs available for the treatment of peptic ulcer. But several reports on clinical evaluation of these drugs show that there are incidences of relapses, adverse effects (arrhythmias, impotence, gynecomastia, etc.) and drug interactions during ulcer therapy (Patil and Surana, 2009).

In the last few years, efforts have been taken to identify new antiulcer drugs from plants with less adverse effects (Jana et al., 2005). So, the present study is aimed to evaluate the antiulcer activity of hydroalcoholic extract of *Ipomoea staphylina* plant in rats.

The whole plant of *I. staphylina* was cleaned and dried under shade at room temperature and powdered. Hundred grams of powder was defatted with petroleum ether (60-80 reagent grade) for 72 hours and then the dried powder was extracted with mixture of distilled water and ethanol in a ratio of 3:7 to get a yield of 11.2% w/w. The dried extracts were stored in airtight container and placed in refrigerator at 0-4°C.

The antiulcer activity of the *I. staphylina* plant extract was evaluated in pyloric ligation model and ethanol-induced gastric ulcer model. In pyloric ligation model, the rats were divided into four groups of six each. Group I rats were treated with vehicle and served as negative control and Group II-IV rats were treated with standard drug omeprazole (20 mg/kg, p.o), hydroalcoholic extract of *I. staphylina* (200 mg/kg, p.o) and hydroalcoholic extract of *I. staphylina* (100 mg/kg, p.o). After 30 min of hydroalcoholic extract of *I. staphylina* and omeprazole treatment pyloric ligation was performed in overnight fasted anesthetized rats. After 4 hours of pyloric ligation animals were sacrificed, abdomen was opened and the esophagus was tied at the end of the stomach. The stomach was isolated and the contents of the stomach were collected in a centrifuge tube. The supernatant was collected and volume of gastric juice and free and total acidity was determined. The stomachs were removed, opened along the greater curvature and ulcer index were determined (Morimoto et al., 1991).

In ethanol-induced gastric ulcer model, the rats were divided into four groups of six each. Group I (toxicant control) received 90% ethanol (1 mL/animal); Group II was treated with omeprazole (20 mg/kg, p.o); Groups III and IV were treated with hydroalcoholic extract of *I. staphylina* 100 and 200 mg/kg, respectively. The rats were fasted for 36 hours and they received 1 ml of absolute ethanol orally. Omeprazole and the extracts were administered orally 30 min before the ethanol dose. After 1 hour of ethanol treatment, animals were sacrificed and the stomachs were removed, opened along the greater curvature and ulcer index were determined (Al-Radahe et al., 2012).

In pyloric ligation model, the hydroalcoholic extract of *I. staphylina* (200 mg/kg) showed significant ($p<0.001$)

Table I

Effect of hydroalcoholic extract of *Ipomoea staphylina* plant on various parameters in pyloric ligation-induced gastric ulcer in rats

Groups	Treatment	Ulcer index	Protection (%)	pH of gastric juice	Gastric juice in (mL)	Free acidity mEq/L	Total acidity mEq/L
I	Control	4.0 ± 0.3	-	2.3 ± 0.1	7.3 ± 0.3	65.0 ± 6.4	99.2 ± 11.2
II	Omeprazole (20 mg/kg)	0.8 ± 0.1[a]	81.4	3.4 ± 0.1[a]	3.2 ± 0.1[a]	25.3 ± 1.5[a]	44.8 ± 2.5[a]
III	*Ipomoea staphylina* (200 mg/kg)	1.5 ± 0.2[a]	62.9	3.0 ± 0.2[a]	3.9 ± 0.1[a]	33.7 ± 2.3[a]	62.7 ± 2.5[b]
IV	*Ipomoea staphylina* (100 mg/kg)	1.9 ± 0.2[a]	52.7	2.7 ± 0.2	4.2 ± 0.2[a]	36.8 ± 4.1[a]	66.3 ± 5.0[b]

All values are expressed as mean ± SEM; [a]$p<0.001$ & [b]$p<0.01$ when compared with control

Table II

Effect of hydroalcoholic extract of *Ipomoea staphylina* plant against ethanol induced gastric ulcer in rats

Groups	Treatment	Ulcer Index	% Protection
I	Control	74.0 ± 2.4	
II	Omeprazole (20 mg/kg)	42.0 ± 2.0[a]	43.2
III	*Ipomoea staphylina* (200 mg/kg)	20.0 ± 3.2[a]	73.0
IV	*Ipomoea staphylina* (100 mg/kg)	38.0 ± 3.7[a]	48.6

All values are expressed as mean ± SEM; [a]p<0.001 when compared with control

rise in gastric pH as compared to control. Both the doses of hydroalcoholic extract showed significant decrease in free acidity, total acidity and ulcer index as compared to control (Table I). The hydroalcoholic extract at the dose of 200 and 100 mg/kg showed 62.9 and 52.7% protection respectively against pyloric ligation-induced ulcer.

In ethanol induced gastric ulcer, the pretreatment with hydroalcoholic extract of *I. staphylina* plant showed a dose-dependent reduction in the severity of the lesions. Both the doses of hydroalcoholic extract significantly (p<0.001) reduced the ulcer index at 200 and 100 mg/kg doses to 73.0 and 48.6% respectively (Table II).

Histopathological evaluation of stomach in ethanol-induced ulcer model showed discontinuity of lining of epithelium and reduction of the submucosa. The extract at 200 and 100 mg/kg doses showed the healed ulcer and almost normal mucosa.

In conclusion, the hydroalcoholic extract of *I. staphylina* has antiulcer activity.

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