INTRODUCTION
Peptic ulcer is a major disorder of gastrointestinal track, define as a break off in the continuity of the mucosa of stomach or duodenum as a consequence of some medications like NSAIDs, gastric acids and pepsin finally causes lesions in internal mucosa [1]. It results probably due to an imbalance between the aggressive and the defensive factors such as acid-pepsin secretion, mucus secretion, blood flow and endogenous protective agents. In gastric ulcer, generally acid secretion is normal or low where in duodenal ulcer, acid secretion is high in half of the patients but normal in the rest[2-3]. It can be of either acute or chronic type. Typically, a recurrent condition affects up to 10% of the population with sufficient severity. An estimated 15,000 deaths occur each year as a consequence of peptic ulcer [4]. Many factors involve to induce the ulcer in gastrointestinal track by increasing acid and pepsin secretion. Another factor which is responsible for the gastric ulcers is oxidative stress in gastric mucosa [5]. Recent studies have shown a correlation between free radicals and the extent of gastric ulceration in experimental animals. There are several types of medicines used to treat ulcer such as H– blocker, proton pump inhibitors and mucosal protective agents. The ulcer due to H.pylori, these medicines are prescribed in combination with antibiotics [6]. If medication is ineffective or complications arise, than surgery is done. However, all these treatments have limited efficacy and having undesirable side effects. In order to overcome the side effects associated with ulcer, alternative medicine is an method for the management of ulcer with the use a plant or its active constituents. These medicines having inherently high safety without any undesirable side effects [7]. The present study is based on the anti-ulcer activity of plant Mitragyna parvifoli Roxb. of family Rubiaceae.

METHODS AND MATERIALS
A. Plant Material collection and authentication
The plant Material was collected from local area of Bhopal M.P. The leaves of M. parvifolia Roxb. were dried, powdered and subjected to extraction. The leaves were identified by Dr. Zia Ulttaran Professor and Head Department of Botany Safia Science College Bhopal-462001, India.

B. Preparation of extracts
The leaves of M. parvifolia Roxb. was collected and dried in shade. The collected leaves were cleaned and then powdered. The leaf powder was extracted with hydro-alcohol (70-30) solvent by maceration for about 7 days. The solvent was concentrated under reduced pressure using rotary evaporation and dried below 40°C. The extract was brown in colour and percentage yield of the extract was calculated.

C. Preliminary Phytochemical screening
The extracts was obtained and followed the different qualitative chemical tests to establish the presence of a mixture of phytoconstituents i.e. alkaloids, glycosides, carbohydrates, phenolics and tannins, proteins, amino acids, flavonoids and others by means of detection methods [9].

D. Acute toxicity studies
Acute toxicity study of extract was carried out according to OECD 425 guideline (Organization for Economic Co-operation and Development) which is based on a stepwise procedure with the use of a minimum number of animals per step [10].

E. Animal care and Handling
Male Wistar rats weighing 150-250g were used in the experiment. The experimental animals were maintained under standard laboratory conditions in an animal house. The research work was carried out under the guidelines of CPCSEA. The experimental work was performed in Pharmacological laboratory.

F. Antiulcer effect by Pylorus ligation
Animals are divided into four groups, each group consisting of six rats. Control group were received distilled water orally. The Omeprazole, in the dose of 20 mg/kg was be administered orally for Group-II with a reference drug for ulcer protective studies. Group-III and-IV received  ethanolic extract of M. parvifolia Roxb in a dose of 200 and 400 mg/kg.p.o. After 45 min of ethanol and Omeprazole treatment, pyloric ligation was be done by ligating the pyloric end of stomach of rats in respective groups using ether anaesthesia at a dose of 35mg/Kg of body weight. The pylorus ligation was done without causing any damage to the blood supply of the stomach. Animals were allowed to recover and

KEY WORDS: Antiulcer activity, Pylorus ligation, Mitragyna parvifoli Rox. Ulcer index.

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stabilize in individual cages and were deprived of water during postoperative period. After 4hrs of surgery, rats were sacrificed and ulcer scoring was done. The gastric juice was collected for the gastric secretion studies [11-12].

The Scoring of ulcer will be made as follows
Normal stomach. .........(0)
Red coloration. ............ (0.5)
Spot ulcer. .................(1)
Hemorrhagic streak. .......(1.5)
Ulcers. .................(2)
Perforation. ..............(3)

Mean ulcer score for each animal will be expressed as ulcer index.

Figure 1: Stomach of control group showing ulcers.

Figure 2: Stomach of Standard group receiving Omeprazole (20 mg/kg) and showing greater recovery in ulcer.

Figure 3: Stomach of Test-1 group receiving 200mg/kg M. parvifolia Roxb. extract and showing mild recovery in ulcer.

Figure 4: Stomach of Test-2 group receiving 400mg/kg M. parvifolia Roxb. extract and showing marked recovery in ulcer.

STATISTICAL ANALYSIS
All represent mean ± S.E.M values. The data were analysed by means of variance (ANOVA). Whenever ANOVA was significant, further multiple comparisons were made by using Bonferonni’s test. All the analysis was performed by using the statistical significance range from p≤0.05 to 0.019. 

RESULTS
A. Phytochemical screening
Preliminary phy-chemical screening indicate that the leaf extract of M. parvifolia Roxb. showed the presence of alkaloids, tannins, phenols and absence of fixed oils and terpenoids.

B. Pyloric ligation induced gastric ulcer
In pyloric ligation induced ulcer in rats, the oral administration of ethanolic leaves extract of M. parvifolia Roxb in two different dose showed significant reduction in ulcer index, gastric volume, free acidity, total acidity as compared to the control group. It was showing protection index of 40 % and 70 % at the dose of 200 and 400 mg/kg respectively in comparison to control whereas the standard group was reduction of ulcer 73.22 %. (Table-1).

TABLE-1
Effect of M. parvifolia Roxb. extracts on Ulcer index and percentage inhibition

<table>
<thead>
<tr>
<th>Treatment groups</th>
<th>Vol. of gastric Juice (ml)</th>
<th>Free acidity (MEQ/L)</th>
<th>Total acidity (MEQ/L)</th>
<th>Ulcer index</th>
<th>% inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>8.4±0.27</td>
<td>88.2±2.60</td>
<td>120.4±2.90</td>
<td>9.8±0.46</td>
<td>-</td>
</tr>
<tr>
<td>Standard</td>
<td>2.84±0.23</td>
<td>32.4±2.74*</td>
<td>38.24±2.32*</td>
<td>2.50±0.30*</td>
<td>73.22</td>
</tr>
<tr>
<td>Test-1</td>
<td>5.84±0.42</td>
<td>76.2±3.00</td>
<td>109.4±2.84</td>
<td>5.80±0.90</td>
<td>39.96</td>
</tr>
<tr>
<td>Test-2</td>
<td>2.94±0.41</td>
<td>37.45±1.60</td>
<td>46.90±1.34*</td>
<td>2.90±0.28*</td>
<td>70.12</td>
</tr>
</tbody>
</table>

Value are express as means ± SEM of 6 observations, Statistical comparison as follows significant at *p<0.01 compared to control.

DISCUSSION
Pylorus ligation induced ulcer was used to study the effect of leaves extracts of Mitragyna parvifoli Roxb on gastric acid secretion and mucus secretion. The pylorus ligation causes accumulation of gastric acid in the stomach and this results in increase gastric acid secretion which causes ulcers in the stomach [13]. The fasting of rats for 36 hours followed by ligation of pyloric end of rat stomach and the ulcer index is determined after 5 hours of the pylorus ligation. The lesions produced by this method are located in the lumen region of the stomach. Many authors have modified the original model [14-15]. In the present study the leaves ethanolic extract of M. parvifolia Roxb and Omeprazole significantly decreased the total acidity and free acidity. This suggests that M. parvifolia Roxb having an antisecretory effect. Its antiulcer activity is further supported by histopathological study shows that protection of mucosal layer from ulceration and inflammation models. The different constituents like flavanoids, tannins, steroids, saponins, alkaloids and glycosides have been reported to be responsible for antiulcer activity.

CONCLUSION
The results of the present study suggest that the ethanolic extracts 400 mg/kg of M. parvifolia Roxb. showed the significant effect in the recovery of ulcer. The 400mg/kg ethanolic extract showed the anti-secretory and cytoprotective effects. In the present study pylorus ligation method was used to evaluate the antiulcer activity. The plant showed the antiulcer activity due to its vital active constituents. The ethanolic extract of M. parvifolia Roxb. may be used for the treatment of ulcer.

REFERENCES