Anti-Ulcer Activity of *Musa paradisiaca* L (Rhizome) Juice Against Aspirin Induced Stomach Ulcers in Wistar Albino Rats

**Abirami J**, **Brindha P**, **Arunraj.K**, **Bharathi M**

*Department of Biochemistry, Srimad Andavan Arts and Science College, Tiruchirappalli, Tamilnadu, India.*

**Associate Dean and coordinator. CARISM, Sastra University, Thanjavur,Tamilnadu, India.**

**Research Scholar. Department of Biotechnology, Srimad Andavan Arts and Science College,Tiruchirappalli, Tamilnadu, India.**

Received on:07-04-2012; Revised  on: 12-05-2012; Accepted on:16-06-2012

**ABSTRACT**

Peptic ulcer is one of the health hazards both in terms of morbidity and mortality. Present study evaluates the gastro protective effect of administration of *Musa paradisiaca* L (Rhizome) juice in Aspirin induced peptic ulcer rats. Studies were carried out using rats as experimental animals. The rats were divided into five groups. Normal control, disease control, Test drug treated (0.5ml/Kg) and 1ml/Kg of *Musa paradisiaca* L (Rhizome) juice and standard drug. Biochemical evaluation of ulcer induced rats revealed significant reduction in serum protein level. The level of lipid peroxide and activities of superoxide dismutase, reduced glutathione were also altered. It is noted that *Musa paradisiaca* L (Rhizome) juice treated rats showed reduced ulcer congestion, haemorrhage and ulceration. The result of the present study substantiated the use of *Musa paradisiaca* L (Rhizome) juice in ulcer incidences.

**Key words:** Ulcer, *Musa paradisiaca* L, Aspirin, Superoxidedismutase, Lipid peroxidation.

**INTRODUCTION**

Ulcer is defined as erosion in the lining of the stomach or duodenum and is caused by the disruptions of the gastric mucosal defense and repair systems. Ulcer of the stomach is called gastric ulcer and in the duodenum is known as duodenal ulcer and together it is peptic ulcer. Cause of ulceration is an imbalance between the rate of secretion of gastric juice and the degree of protection afforded by the gastroduodenal mucosal barrier. Other factors are tobacco smoking and chewing and Nonsteroidal anti-inflammatory drugs.

Vomiting blood, Bloating and abdominal fullness, weight loss, stomach irritation are symptoms of ulcer. It’s diagnosis procedure is made primarily by barium radiography, flexible fiberoptic endoscopy and biopsy. Treatment of ulcer is directed to heal by careful dietary habits. If pain continues or complication develop, then surgical treatment like Vagotomy, Pyloroplasty, Antrectomy are recommended.

The goals of antiulcer therapy are to relieve pain, promote to heal ulcer and to prevent relapse. Existing drugs have adequately achieved the first two goals and partially the third. All the allopathic treatment produce side effects such as vomiting, nausea and depression.

Besides these treatments incur heavy economic burden. Hence there is a need for an Alternative Medicine-Herbal Medicine. Hence in the present work of an ecofriendly herb *Musa paradisiaca* L (Rhizome) juice is selected and evaluated for its antulcerogenic effects.

**MATERIALS AND METHODS**

Rhizome of *Musa paradisiaca* L is collected and juice extracted using mechanical mixer. Then the juice was stored in an air tight container for further analysis. Healthy adult wistar strain of albino rats, weighing 100-120g was used as experimental models. They were fed with standard rat chow pellet. After aclamatisation the experimental animals were grouped as follows and administered with the test drug.

<table>
<thead>
<tr>
<th>Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Normal animals.</td>
</tr>
<tr>
<td>II</td>
<td>Disease Control (Induced with Aspirin (80mg/kgbw))</td>
</tr>
<tr>
<td>III</td>
<td><em>Musa paradisiaca</em> L (Rhizome juice) (0.5ml/kgbw)</td>
</tr>
<tr>
<td>IV</td>
<td><em>Musa paradisiaca</em> L (Rhizome juice) (1.0ml/kgbw)</td>
</tr>
<tr>
<td>V</td>
<td>Drug control (8.0mg/kgbw) Standard drug-(paracetamol)</td>
</tr>
</tbody>
</table>

**INDUCTION OF ULCER**

Gastric ulcer was induced in group II, III, IV, & V Animals. They were starved for 48 hours with access to drinking water ad libitum. Group III animals were given 0.5ml/kg bw.

Group IV animals were given 1.0ml/Kg bw and Group V animals were given paracetamol (8.0mg/Kg bw). After 22 days tested animals were sacrificed.

Blood samples were collected from test animals then total proteins estimated by Lowry’s method and carbohydrate by Anthrone method. Reduced glutathione and lipid peroxides were assayed and the activity of superoxide dismutase was also assessed. Finally RBC, WBC and Haemoglobin levels were also determined. Data obtained were tabulated.

**RESULT AND DISCUSSION**

In Group II animals, carbohydrate and protein levels decreased. The oral administration of *Musa paradisiaca* L (Rhizome) Juice at dose of 0.5&1 ml /kg bw showed significant elevation of protein and carbohydrate level (Fig 1&2).

The juice significantly (P<0.05) Reduced the ALP Activity when compared to Drug control. The result obtained there by revealed the protective effect of test drug (Fig 3).
Plant juice of *Musa paradisiaca* L (Rhizome) exhibited gastroprotection in aspirin induced ulcer model. Group II animals showed increased level of lipid peroxide (Fig 4) and decreased level of reduced glutathione (Fig 5) and activity of SOD (Superoxide dismutase) was altered by test drug (Fig 6). Ulcer is a condition where there is a profound haemorrhage as evidenced from the decreased level of Hb and RBC Count (Fig 7 & 8) obtained for group II animal. It is noted that Plant juice inhibited aspirin induced ulcer, congestion, haemorrhage.
Hence in the present work Rhizome of herbal drug which are also free from producing any serious side effects, leading to the development of more effective, less expensive antiulcer chemical, toxicological, and pharmacological features of various plant extracts antiulcer drug researches started focusing their research towards investigating and anti androgenic effect. Because of various side effects caused by existing Cause side effects like sedation, ingestion, head ache, bowl upset, confusions, of ulcer, many of these do not fulfill all the requirements besides they also mucosal barrier. Even though a range of drugs are available for the treatment pump inhibitors, acid Neutralizers (Antacids) and drugs affecting the

**REFERENCES**


17. Munipan, Sundararaj T., Antulcer activities of *Bambusa*


Source of support: Nil, Conflict of interest: None Declared