

# Application of Statistical Devices in Ethno – Medico Botanical Studies on *Calotropis Procera* (Asclepiadaceae)

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## ARTICLE DETAILS

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## ABSTRACT

In biological and medical sciences, the statistical tools for the collection, presentation and analysis of observed facts relating to the causes and incidence of diseases and the result obtained from the use of various drugs and medicines are of great importance. The information on early and indigenous medicinal uses of plants in India is vast and widely scattered. Though intensive Ethno – botanical work has been done only in a small part of our country, Srivastava *et al.*, 1980; Gupta, 1981a; Shah, 1982 etc. Singh and Pandey, 1980 have described the use of some medicinal plants among tribal of Eastern Rajasthan. Ethno – botanical studies directed to specific tribal societies have also been undertaken in several parts of our country (Srivastava *et al.*, 1981; Maheshwari *et al.* 1982; Dam and Hajra, 1981).

In our paper, a sincere attempt in this regard for the welfare of Human beings where / root latex of *Calotropis procera* (ASCLEPIADACEAE) has been taken into account. The result obtained from the antiulcer activity parameters were subjected for determining intergroup differences, each parameter was analyzed separately and presented through graphs.

## 1. Introduction

Peptic ulcers are believed to develop because of an imbalance between aggressive factor such as mucus, bicarbonate, blood flow, epithelial cells restoration and prostaglandins (Rajesh, 2004). Recurrent gastric and duodenal ulcers are caused by *Helicobacter pyloric* infection (Samnel D. Uretsky, 2006). In present study, the extract of *Calotropis procera* roots were passed through phytochemical and pharmacological screening by pyloric ligation method.

## 2. Materials and methods

The infusion of dried roots of *Calotropis procera* were taken and placed in a conical flask with different solvents viz. petroleum ether, chloroform, ethanol and distilled water. The crude latex of *Calotropis procera* (ASCLEPIADACEAE) were separately collected in distilled water (1:1) in a plastic tubes and were shaken gently, closed with cork and placed in existing room temperature (25 - 28°C). The collected samples of latex were initially passed through centrifugation at 25°C. The precipitated rubber was separated and then submitted to dialysis against water. The water of dialysis was pooled down and named as dialyzable latex (DL). After

additional 60 hours of continuous dialysis, the membrane retained material was freely centrifugated and the very clean and water soluble material was separated and named as non – dialyzable latex (NDL). The new pallet was joined to that of the first centrifugation and named as rubber latex (RL). The three latex fractions were thus freeze dried and used in the further investigation.

Animal : Albino rats were starved for overnight having access to drinking water. 6 rats were used for extract and control groups. The pylorus was ligated.

## 3. Results and discussions

Antiulcer activity is carried out using pylorous ligation method to screen antiulcer activity and compared with standard drug ranitidine. Ulcers were produced significantly after 4 hours of ligation in the ± ve control. Various parameters such as spot ulcer, hemorrhagic streak, ulcer and their numbers were observed and

scoring was given for all the groups. Before that the contents of the stomach was carefully taken out and analyzed for p<sup>H</sup>, free acidity and total acidity.

Table : Showing petroleum ether, chloroform and other parameters

| Extract                         | Ulcer score | Free-acidity | Total acidity | Gastric p <sup>H</sup> |
|---------------------------------|-------------|--------------|---------------|------------------------|
| Petroleum ether                 | 4.75±0.154  | 2.85±0.794   | 45.1±1.28     | 1.503±0.018            |
| Chloroform                      | 1.6±0.211   | 15±0.734     | 33.7±0.462    | 34±0.037               |
| Ethanol                         | 2.38±0.167  | 19.8±0.116   | 38.2±0.332    | 3.87±0.021             |
| Aqueous                         | 2.91±0.301  | 19.0±0.895   | 35.0±0.336    | 3.76±0.042             |
| Normal (=No ligation treatment) | 0.5±0.18    | 8.5±0.305    | 25.25±0.502   | 2.47±0.039             |
| +ve control (=Ligated)          | 5.41±0.301  | 27.75±0.281  | 46.6±0.435    | 1.42±0.062             |
| Standard (Ranitidine 20 mg/kg)  | 1.16±0.167  | 2.5±0.258    | 30.4±0.481    | 3.85±0.06              |

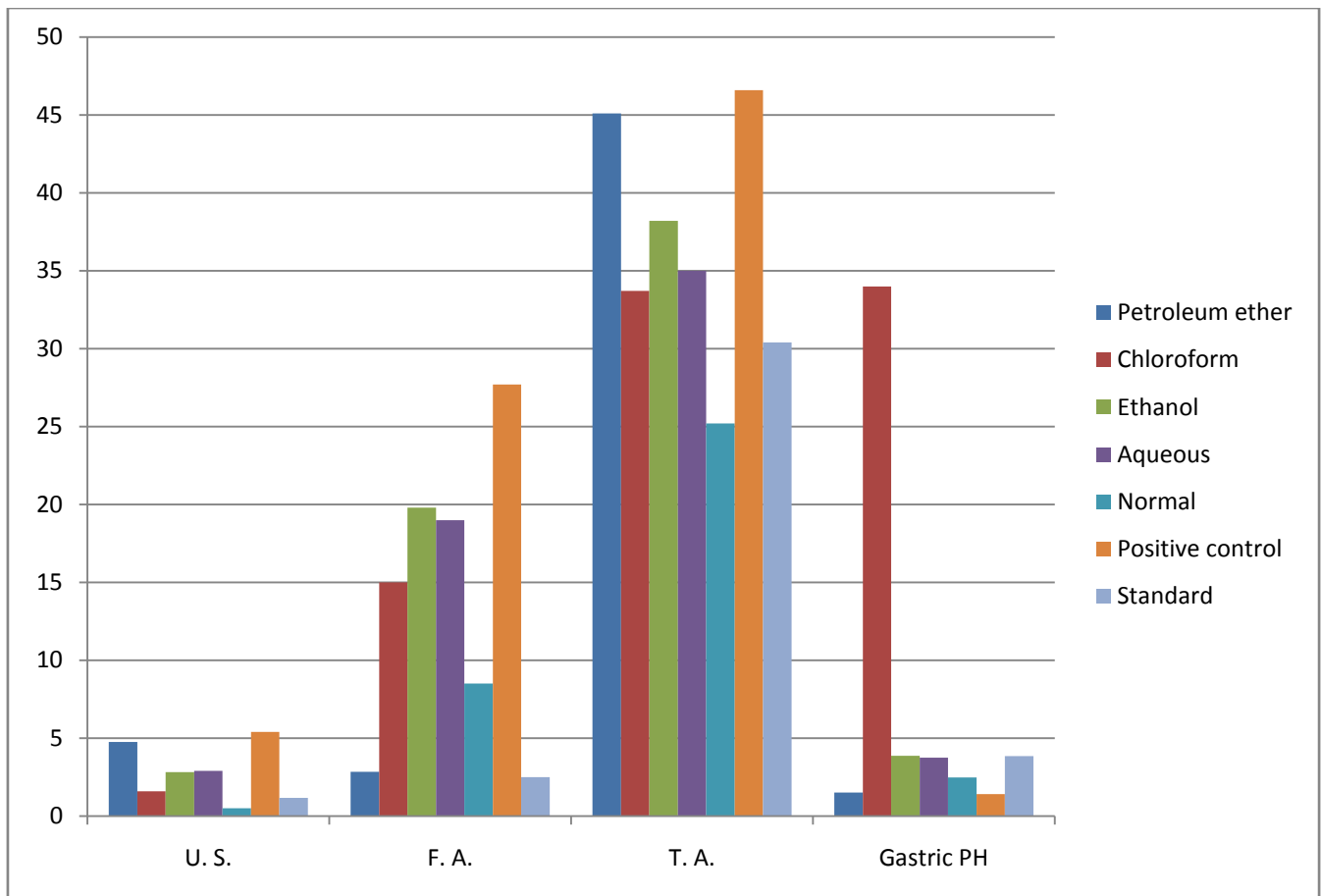


Fig. – Showing Petroleum ether and other parameters.

**Abbreviation :**

- U. S. – Ulcer score
- F. A. - Free – acidity
- T. A. – Total acidity
- G. pH – Gastric p<sup>H</sup>

The control group ( $\pm$  ve) animals had ulcers and hemorrhagic streaks whereas normal control group did not show any ulcers and streaks except couple of red spots. It was

found that ulcer scale and and gastric p<sup>H</sup> of chloroform extract has exhibited significant activity compared to  $\pm$  ve control group.

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