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Survival Probability of Selected Medicinal Plants Used in Ulcer activity

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Abstract

Peptic ulcer is one of the common diseases in human population. Due to rapid development and civilizational constraints including a stressed lifestyle, the incidences of peptic ulcer are increasing. Herbal medicine have long been used therapeutically for a large number of human disorders and are still being used for many of the health needs of a large population of the world. In the present papaer statistical analysis of selected potential herbal drugs / extracts will be carried out to evaluate statistically signify their efficacy data in the treatment of Ulcer. The efficacy data of the selected medicinal plants will be applied to critical statistical tools for their activities. The mathematical analysis shall be carried out for the herbal selected medicinal plants In the current paper survival analysis was confirmed on the basis of hypothesis.

Key-Words: Antiulcer, Medicinal Plants, Mathematical tools, Survival Probability

Introduction

In the course of the centuries, important contributions have been made in the use of plants for therapeutics as traditional medicine. Herbal preparations were the original therapeutic interventions used by man for years to treat diseased conditions in humans and livestock. Development of herbal products depended on local botanical flora. As a result, remedies for different ailments developed in different parts of the world.

Peptic ulcer is a condition associated with a number of factors involving autonomic nervous system, which occurs due to excessive acid secretion in the stomach. This condition is difficult to control with single drug therapy and complete cure cannot be achieved. Even after discontinuation of the drug the relapse rate is high, and the long-term use of synthetic drugs produces adverse effects on the human body.

Rhodomyrtus tomentosa (Ceylon hill gooseberry) of family Myrtaceae is a flowering plant, native to Southern and Southeastern Asia, from India, east to southern China, Taiwan and the Philippines, and south to Malaysia..

The buds and tender leaves have been used traditionally in abscesses, diarrhoea, colic, dysentery, furanculosis, haemorrhage and the concentrated decoction of the leaves have been used as an antiseptic for abscess and wounds. Keeping in view the above background, comprehensive statistical analysis of selected potential herbal drugs / extracts will be carried out to evaluate statistically signify their efficacy data in the treatment of Ulcer. The efficacy data of the selected medicinal plants will be applied to critical statistical tools for their activities. The mathematical analysis shall be carried out for the herbal selected medicinal plants In the current paper survival analysis was confirmed on the basis of hypothesis. The medicinal plants has been selected on the basis of literature survey

Material and Methods

Selection of the plant

Plants were selected on the basis of literature review.

Data sources, search strategy, and selection criteria

A systematic review of the published literature will be carried out using the suitable search strings in the following data sources: Google, MEDLINE (via PUBMED), Biological and Chemical Abstracts, global

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health, National Science Library and the reference books. Search terms shall include but not limited to the key words viz. antiulcer activity. Survival analysis was selected for the study.

Survival Probability

Survival analysis involves the modeling of time to event data. In this context, death or failure is considered an "event" in the survival analysis. So to determine the survival a hypothesis was assumed in all the two plants with four different parameters in ulcer.

Calculation of probability

HYPOTHESIS: It was assumed that all the plants with in all the parameters having survival. i.e. there was no mortality.

We are given four independent plant parameters –
Ethanol induced   E.I.
Asprin   A.S.
Cold Resistant   C.R.
Pylorus Ligation   P.L.

 Plant selected

Rhodomytus Tomentosa

Mallotus Philippensis

Probability of each parameter:
Ethanol induced   E.I. = p1 =1/4
Asprin   A.S. =p2 =1/4
Cold Resistant   C.R. =p3 =1/4
 Pylorus Ligation   P.L.=p4 =1/4

Rhodomytus tomentosa: In this plant we are given four independent parameters-E.I., A.S. , C.R. , P.L. with respective probability of occurrence as p1 ,p2 ,p3 ,p4 i.e. 1/4 ,1/4 ,1/4 ,1/4. Then probability that there is no survival is

(1-p1)×(1-p2)×(1-p3)×(1-p4)
= (1-1/4)×(1-1/4)×(1-1/4)×(1-1/4)

Hence, the probability of at least one survival or having no mortality can be determined
 as follows- P= 1 - (1-1/4)×(1-1/4)×(1-1/4)×(1-1/4)
=1 – 3/4×3/4×3/4×3/4
=1 – 81/256
=1 – 0.316
=0.684

Conclusion: It was found that our hypothesis is right. There was no mortality in the
 plant *Rhodomytus tomentosa* with in all the parameters having survival.

Mallotus philippensis was taken for the study.In this plant we are given four
 independent parameters-E.I. , A.S. , C.R. , P.L. with respective probability of
 occurrence as p1 ,p2 ,p3 ,p4 i.e. 1/4 ,1/4 ,1/4 ,1/4. Then probability that there is no survival is
(1-p1)×(1-p2)×(1-p3)×(1-p4)
= (1-1/4)×(1-1/4)×(1-1/4)×(1-1/4)

Hence, the probability of at least one survival or having no mortality can be determined
 as follows- P= 1 - (1-1/4)×(1-1/4)×(1-1/4)×(1-1/4)
=1 – 3/4×3/4×3/4×3/4
=1 – 81/256
=1 – 0.316
=0.684

Conclusion: It was found that our hypothesis is right. There was no mortality in *Mallotus philippensis* with in all the parameters having survival.

Results and Discussion

An attempt was made in the present studies to confirmed the anti ulcer activities of of *Rhodomyrtus tomentosa* and *Mallotus philippensis* by survival Probability. Survival analysis involves the modeling of time to event data. In this context, death or failure is considered an "event" in the survival analysis. So to determine the survival a hypothesis was assumed in all the two plants with four different parameters in ulcer. Finally it was found that our hypothesis is right. There was no mortality in the selected plants with in all the parameters having survival. Hence, it can be concluded that the plants are having antiulcer activities. Further studies on the isolated compounds would probably establish the exact mechanism by which the selected plants exert their antioxidant and anti ulcer effects. The results of the present study also indicate that extracts under study can be used as easily available and cost effective source of natural antioxidants.

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