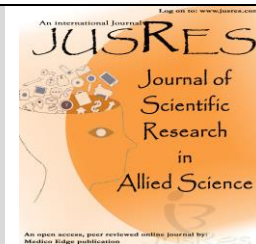




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Evaluation of Herbal Extracts for the Management and Treatment of Pain

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ABSTRACT

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Herbals significant potential in contemporary medicine and nutraceutical development. Further research is imperative to fully understand and connect its wide-ranging therapeutic benefits. Research, testing, and marketing add considerably to the cost of prescription medicines. Herbs tend to be inexpensive compared to drugs. This work opens the way for the further research on these plants and it may help future researchers to find a lead compound with ease for analgesic and anti-inflammatory drug discovery. So it is hypothesized that plant extracts may have analgesic activity.

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INTRODUCTION

Plant produces millions of chemical compounds which have numerous biological activity from mild analgesics to anti cancerous activity but as the plants have multiple phytochemicals its important to study and consider if other compounds not having any unwanted result or effect. In present era Alkaloids are isolated from the medicinal plant and used in form of drug as morphine is isolated from poppy plant. Most of the plants are used for medicinal purpose across the world. Benefits & Importance of Medicinal Plants Ayurvedic herbs are time tested for their health and other benefits. The nutritive value that they pack is highly recommended for their healing powers. Known to induce no side effects, they have a unique aroma and flavor and when consumed regularly, they act as a perfect mechanism to bring about a balanced harmony between mind and body. [1] They rejuvenate the whole system instead of focusing on one specific organ or body part. Herbal medicines tend to be more effective for longstanding health complaints that don't respond well to traditional medicine. Herbs typically have

fewer side effects, and may be safer to use over time. A well-known prescription drug uses to treat arthritis, was recalled due to increased risk of cardiovascular complications. On the other hand, alternative treatment for pain has few side effects. Another advantage to herbal medicine is cost. Herbs cost much less than prescription medications. Research, testing, and marketing add considerably to the cost of prescription medicines. Herbs tend to be inexpensive compared to drugs. [2-3] This work opens the way for the further research on these plants and it may help future researchers to find a lead compound with ease for analgesic and anti-inflammatory drug discovery. So it is hypothesized that plant extracts may have analgesic activity.

EXPERIMENTAL WORK

Collection of Plant Drug

The seeds of *Cycas squarrosa* were identified and collected from the local market of Bhopal and authenticated by department of Pharmacognosy, RKDF College of Pharmacy Bhopal M.P.

Preparation of Extracts

The seeds of *Cycas squarrosa* were rinsed thoroughly in tap water and dried in shade for about 20 days under controlled temperature. Then the crude material was powdered, passed through a 40 mesh sieve and stored in a well closed container for further usage. Dried coarsely powder were successively soxhlated using petroleum ether, chloroform and water as solvent. The extracts were filtered and the solvents were evaporated to dryness under reduced pressure in a rotary evaporator. The percentage yield of all the extracts were calculated and recorded. All obtained extracts were stored for further use.

Evaluation of analgesic activity of plant drug

Animals selected for the study

Animals used in the present experiment were albino rats weighing 150-250 g of either sex, obtained from RKDF College of Pharmacy Bhopal M.P. All the experimental animals were maintained at air conditioned central animal house under suitable conditions of housing, temperature, ventilation and nutrition as per CPCSEA guidelines. Ethical clearance from the institutional animal ethical committee was obtained. All the drugs were administered orally with the help of a sterile, nontoxic tube made up of polyvinyl chloride.

Grouping of animals

All the experimental animals were divided in five groups having six animals in each group as per the following;

Group I: Control rats-received vehicle only (distilled water)

Group II: Standard rats-received Tramadol 10 mg/kg

Group III: Petroleum ether extract of *Cycas squarrosa* 200 mg/kg

Group IV: Chloroform extract of *Cycas squarrosa* 200 mg/kg

Group V: Aqueous extract of *Cycas squarrosa* 200 mg/kg

Eddy's Hot Plate method

Analgesic activity of petroleum ether extract, chloroform extract and aqueous extract were explored by Eddy's hot plate method. Mice were placed on the surface of Eddy's Hot Plate in which temperature was maintained at 55-56°C and observed for either paw licking or jumping reaction. The reaction time was taken as the interval from the instant the animal reached the hot plate until the moment the animal licked its feet or jumped out. The reaction time was recorded using stopwatch before and after treatment with different drugs. [4-6]

RESULTS AND DISCUSSION

Preparation of extracts

The seeds of *Cycas squarrosa* were shade dried, powdered and successively soxhlated using petroleum ether, chloroform and water as solvent. All the obtained extracts were filtered and the solvents were evaporated to dryness under reduced pressure in a rotary evaporator. The percentage yield of all the dried extracts was calculated.

Evaluation of plant extracts of *Cycas squarrosa* for analgesic activity

Pain is a condition which is regularly dealt with in daily clinical practice. Hence, any attempt to contribute an easily available analgesic drug from the available flora is always accepted without any reluctance. The analgesic activity was evaluated by Eddy's hot plate, measuring the percentage increase in mean reaction time as compared with the control group (treated with normal saline) set as 100% reaction time. The reaction time after drug administration, at intervals of 30, 60 and 90 minutes were observed. The findings were recorded in Fig 1.1

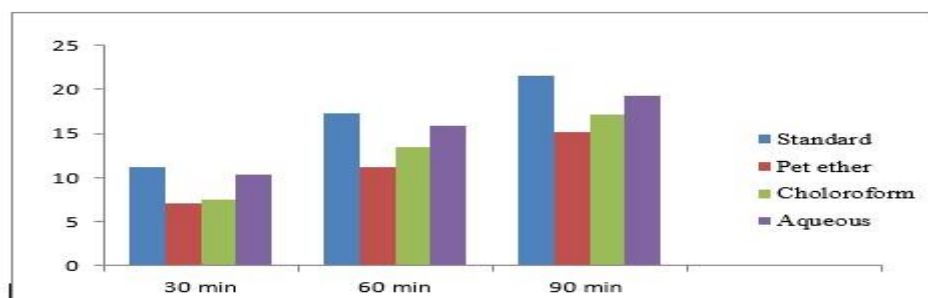


Fig 1.1 Effect of *Cycas squarrosa* on Eddy's Hot Plate Method

CONCLUSION

Pain is an unpleasant sensation associated with actual or potential tissue injury and involves both physical and emotional components. Analgesics are drugs used to relieve pain without causing loss of consciousness. Based on their site of action, they are broadly divided into centrally acting and peripherally acting analgesics. This investigation on the extracts showed the presence of saponins and flavonoids in the aqueous (water) extract. According to these results, it may be hypothesized that flavonoids, which are present in the aqueous (water) extract, could be considered responsible for the analgesic activity.

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