

EXPERIMENTAL EVALUATION OF ANTI-INFLAMMATORY ACTIVITY OF ŚATAPUSHPĀ (ANETHUM SOWA ROXB) ON CARRAGEENAN INDUCED PAW OEDEMA

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ABSTRACT

To evaluate anti-inflammatory activity of *Anethum sowa Roxb.* on Carrageenan induced paw oedema in male albino rats. Methanolic and Chloroform extract of seeds of *Anethum sowa Roxb.* were prepared. Aceclofenac was taken as a standard drug. Wistar rats were divided into 6 test groups of 6 animals, which received control, standard Aceclofenac (200 mg/kg), 1% carrageenan (0.1 ml), methanolic extract of seeds of *Anethum sowa Roxb.* in 200mg/kg and 400 mg/kg, chloroform extract in 200mg/kg and 400mg/kg respectively. One hour after the oral administration of control, standard and test drug, 0.1 ml of 1% carrageenan in normal saline was injected in to plantar aponeurosis of the left hind paw of the rat. The volume of the paw was measured by a plethysmometer in 1, 2, 3, 4, 5 and 24 hours after carageenan in suspension injection. The % increase in paw volume in animals treated with standard, methanol extract, chloroform extract were compared with the increase in paw volume of animals of control group after 1, 2, 3, 4, 5 and 24 hours. It was found that group VI, Chloroform extract of Śatapuṣpā (*Anethum sowa Roxb.*) 400mg/kg given orally has given the highest, 60.077 % inhibition in oedema compared to other groups. It may be hypothesized that Chloroform extract of *Anethum sowa Roxb* and oxidative stress reduction is responsible for its ameliorative role in carrageenan- induced paw oedema inhibition. Therefore, it is hypothesized that it will also reduce Śoṭha (One of the cardinal sign of inflammation)

Keywords: *Anethum sowa Roxb*, Carrageenan induced paw oedema, Anti-inflammatory activity.

INTRODUCTION

Pain and discomfort frequently affects one's normal routine life. *Shoṭha* is one of such manifestations which may interfere one's normal

health. Drugs that are currently used for the management of inflammatory conditions are non-steroidal anti-inflammatory drugs

(NSAIDS). These carry potential toxic effects, of which gastrointestinal side effects are the commonest. Therefore it is essential that efforts should be made to introduce new medicinal plants, to develop cheaper and effective drugs with less toxicity and greater absorption.

AIM

To evaluate anti-inflammatory activity of *Anethum sowa* Roxb. on Carrageenan induced paw oedema in male albino rats.

MATERIALS & METHODS

Methanolic and chloroform extract of seeds of *Shatapushpa* (*Anethum sowa* roxb). Were evaluated for its anti-inflammatory activity by CIPO. Wistar rats were divided in to six groups of six animals each.

Group I – Control group, was administered NS in a volume of 0.2 ml orally.

Group II - Standard group, Aceclofenac (40 mg/kg bw)

Group III – Methanolic extract of seeds of *Shatapushpa* (*Anethum sowa* Roxb.) (200mg/kg bw)

Group IV–Methanolic extract of seeds of *Shatapushpa* (*Anethum sowa* Roxb.) (400mg/kg bw)

Group V – Chloroform extract of seeds of *Shatapushpa* (*Anethum sowa* Roxb.) (200mg/kg bw)

Group VI - Chloroform extract of seeds of *Shatapushpa* (*Anethum sowa* Roxb.) (400mg/kg bw)

One hour after the ingestion of above drugs, 0.1 ml of 1% Carrageenan in NS was injected in to plantar aponeurosis of the left hind paw of each rat.

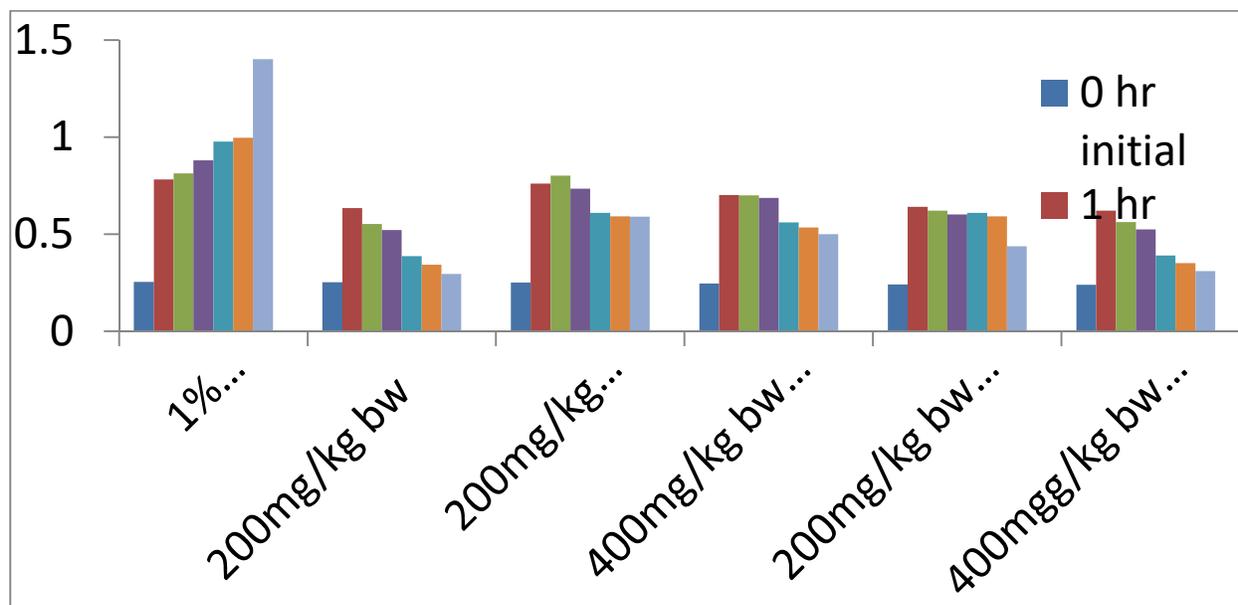
Volume was measured with the help of plethysmometer in 1, 2, 3, 4, 5 and 24 hrs.

The percentage increase in the paw volume in animals treated with Standard, methanolic extract and chloroform extract were compared with the increase in paw volume of animals of control group after 1, 2, 3, 4, 5 and 24 hours.

ANALYSIS

Obtained results were compared to each other using Dunctets Multiple Comparison test.

RESULTS



% Inhibition of edema-

Control group-NA

Standard group-5.3%

Methanolic extract of seeds of *Shatapushpa* (*Antheum sowa roxb.*) (200mg/kg bw)-31.632%

Methanolic extract of seeds of *Shatapushpa* (*Antheum sowa roxb.*) (400mg/kg bw)- 40.584%

Chloroform extract of seeds of *Shatapushpa* (*Antheum sowa roxb.*) (200mg/kg bw)- 49.168%

Chloroform extract of seeds of *Shatapushpa* (*Antheum sowa roxb.*) (400mg/kg bw)-60.077%

DISCUSSION

From the ANOVA analysis of the raw data the fecal for over (carrageenan disease control) chloroform extract and methanolic extract of seeds of *Shatapuspa* (*Anethum sowa roxb.*) was greater than critical values, so difference was found as significant.

Furthermore, free radicals have also been documented to induce the tissue injury and pain in chronic constriction injury. Inflammation has been reported to increase the oxidative stress. Free radicals play an important role in reducing inflammation via its anti-oxidant action.

Therefore, it may be hypothesized that Chloroform extract of *Shatapuspa* (*Antheum sowa roxb.*) and oxidative stress reduction is responsible for its ameliorative role in Carrageenan induced paw edema inhibition. Therefore it may be hypothesized that it will also reduce the edema or *Shotha*. (One of the Cardinal Signs of inflammation).

CONCLUSION

From this experimental study, we concluded that methanolic extract and chloroform extract had shown the significant effect on paw edema. Chloroform extract 400 mg/kg given orally has given the highest % inhibition in edema.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Neelam Gupta: Experimental Evaluation Of Anti-Inflammatory Activity Of Śatapushpā (*Anethum Sowa Roxb*) On Carrageenan Induced Paw Oedema. International Ayurvedic Medical Journal {online} 2018 {cited February, 2018} Available from: http://www.iamj.in/posts/images/upload/299_301.pdf