

ACUTE AND CHRONIC ANTI INFLAMMATORY STUDY OF A MINERAL DRUG – APPALAKARAM (IMPURE SODIUM CARBONATE)

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ABSTRACT

India has a long history and strong base of traditional system of medicine. Siddha medicine has to increase its level of preparedness to face a new era of globalisation, information, exploration, and consumer awareness. In siddhar's classification, mineral objects are four kinds. Among these salts (Karasaram) are twenty five in numbers. In which Appalakaram is one of the natural salt. In siddha system of medicine the signs and symptoms of Azhal Keel Vaayu Noi are identical with osteoarthritis in modern medicine. Osteoarthritis is a joint inflammation that results from cartilage degeneration. To reduce this inflammation the single drug appalakaram was taken for evaluation of acute anti-inflammation by carageenan induced rat hind paw oedema method and chronic inflammation by cotton pellet granuloma method. In these pharmacological evaluations, the drug appalakaram possess mild acute and good chronic anti-inflammatory effect. The study methods, observation and the data of the results will be presented and discussed.

Keywords: Appalakaram, Azhal Keel Vaayu, Osteoarthritis, Anti-inflammation, Siddha system.

INTRODUCTION

Osteoarthritis is the most common joint disease affecting geriatric person above 50 years of age worldwide. Above 50 years of age women are affected mainly due to hormonal imbalances². The single drug Appalakaram is obtained from the alkaline soil of earth. Since this is used in manufacture of (puppet) appalam it is known as Appalakaram. Its actions are antacid, anti flatulence, carminative, lithotriptic and diuretic. It is effective in the treatment of throbbing pain, abdominal distension, gastric ulcer, vatha diseases, kabha diseases and arthritis². A review of literature did not reveal any reports on the anti inflammatory activity of appalakaram. So the mineral drug appalakaram was subjected to evaluate the acute and chronic anti inflammatory effect in albino rats. The activity was compared with that of standard drug ibuprofen.

OBJECTIVE

To evaluate the acute and chronic anti-inflammatory action with the mineral drug "Appalakaram" in Albino Rats by hind paw oedema method and cotton pellet granuloma method.

MATERIALS AND METHODS

Hind Paw oedema Method-acute anti inflammation:

This experiment was carried out in Pharmacology laboratory of Govt. Siddha Medical College, Palayamkottai.

Experimental Animals

6 healthy albino rats weighing 150 to 200 gm were taken and divided in to three groups, two rats in each group.

Preparation of the test drug

100 mg of Appalakaram was taken and mixed with 10 ml of water.

Method

The control group albino rats were administered with distilled water orally @ 2ml/100 gm body weight. The standard treatment group received ibuprofen @ 20 mg/100 gm body weight. The treatment group received the test drug "Appalakaram" @ 10 mg/100 gm body weight. Before administering the test drug the hind paw volume of all rats were measured by dipping the hind paw up to the tibio tarsal junction in a mercury plethysmograph. While dipping the hind paw by pulling the syringe piston the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph. Soon after measurement the drugs were administered orally.

One hour later subcutaneous injection of 0.1 ml of 1 % (W/V) carageenin in water was made in to plantar surface of both hind paws of each rat. Three hours after carageenin injection the hind paw volume was measured once again. The difference between the initial and final volume was calculated and compared.

Table 1: Table shows the acute anti inflammatory action response

Name of drug/group	Dose / 100 gm of body weight	Initial reading (Avg.)	Final Reading (Avg.)	Mean difference	% of inflammation	% of inhibition	Remarks
Water	2 ml	0.55	1.4	0.85	100	-	-
Ibuprofen	20 mg/ml	0.55	0.85	0.33	35.3	64.7	-
Appalakaram	10mg/ml	0.55	0.85	0.8	94	6	Mild

Cotton pellets granuloma method-chronic anti inflammation

Experimental Animals

6 healthy albino rats weighing 125 to 150 gm were taken and divided in to three groups each consisting of two rats.

Preparation of the test drug

100mg of Appalakaram was dissolved in 10 ml of water. This one ml contains 10 mg of test drug.

Method

Each rat was anesthetized with ether and sterile cotton pellets were implanted subcutaneously in the groin on each side. From the day of implantation one group of animal received Appalakaram in the dose of 10 mg/100 gm body weight. The standard drug of animals received ibuprofen in a dose of 20 mg/100 gm body weight. On the 8th day the rats were sacrificed and the pellets were removed and weighed. Then they were put in an incubator at 50 -55 ° C and then the weight of the granulation tissue was determined separately.

Table 2: Table shows the chronic anti inflammatory action response

Name of drug/group	Dose / 100 gm body weight	Pellet weight	Pellet weight with granuloma	Mean difference	% of inflammation	% of inhibition	Remarks
Appalakaram	10 mg/ml	10 mg	180 mg	-	60	40.00	Good
Ibuprofen	20 mg/ml	10 mg	140 mg	-	43.75	56.25	-
water	2 ml	10 mg	320 mg	-	100	-	-

RESULT

Hind paw method

The Appalakaram had mild acute anti-inflammatory effect.

Cotton pellet granuloma method

The Appalakaram had good chronic anti-inflammatory effect.

CONCLUSION

Pharmacological study of Appalakaram revealed mild acute and Good chronic antiinflammatory action. By this action the drug reduces the joint inflammation in osteoarthritis.

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