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ANTI INFLAMMATORY ACTIVITY OF *PASSIFLORA INCARNATE L* IN RATS

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ABSTRACT : The Ethonolic extract of *Passiflora incarnate L* was tested to study the anti- inflammatory activity using the technique of carrageenan induced paw edema in albino rats. The extract showed significant anti-inflammatory activity comparable to the reference Standard Ibruofen.

Key words: Anti-inflammatory; Eathonolic extract ; Passiflora incarnate,

INTRODUCTION

Passiflora incarnata L. (*Passifleraceae)* Commonly known as sirupunaikali in a Brazilian herb used in many Ayurvedic preparation in the Indian system of medicine. Currently, the leaves and stems are used as antispasmodic, astringent, diaphoretic, hypnotic, narcotic, sedative, Vasodilator and are also used in the treatment of women's complaints. The flower is used as an alternative medicine in the treatment of insomnia, nervous tension, irritability, neuralgia, irritable blood syndrome, premenstrual tension and Vaginal discharges. An infusion of the plant depresses the motor nerves of spinal cord, making it very valuable in the treatment of back pain. The infusion in also sedative slightly reduces blood pressure and increases the respiratory rate. Various parts of the plant are being used in the traditional system of medicine to treat analgesic, anti-inflammatory. The plant *P.incarnata* was identified by the department of botany, St. Joseph College, Tiruchirappalli and the Plant Materials were Collected from ooty regions, Tamil Nadu, India.

MATERIAL AND METHODS

Preparation of the Extract

The Collected drugs were cleaned, dried and powdered. The dried drugs were exhaustively extracted in the soxhlet apparatus (18h of extraction) using analytical grade solvent. The extract was concentrated in vacuum to a syrupy consistency.

Animals

Healthy Male and Female wister Albino rats with body weight 100-150g were used for study. They were feed with standard chaw diet and water adlibitum. They were housed in polypropylene cage Maintained under standard conditions (12h light / 12h dark cycles 25± 1˚C, 35-60 % humidity).

The Experimental protocol was subjected to the scrutiny of Institutional Animal Ethics Committee and was cleared by the same before starting.

Acute Toxicity Study

Healthy albino rats of either sex were starved over night and divided into five groups, Each containing six animals (OECD Gguidelines 1997) Animals were orally feed with an increasing dose of 25,50,75 mg/kg body weight of Ethanolic extract of *P.incarnata* . After oral administration the animals were observed for signs of toxicity, gross behavioral changes and Mortality up to 14d.

Anti-inflammatroy Activity

Ethanolic Extract was Evaluated for their anti-inflammatory activity by the carrageenan induced rat paw edema method(Winter et al., 1962). Albino rats of either sex were divided into five groups of six animals . First group received normal saline, second group received Ibruofen and remaining group received 25, 50 ,75 mg /kg body weight of Extract.

Food was withdrawn overnight, but adequate supply of water was given to rats before the Experiment. The drugs were given orally with the help of an oral catheter. After 1hr, a sub plantar injection of 0.05ml of 1% freshly prepared carrageenan was given to the right hind paw to all the animals. The paw volume was measured with help of plethysmometer immediately after injection. The paw volume was measure after 2,3 &4hr.Theavarage fourth hour paw volume of the extract treated rats was compared with the controlgroup and standard deug(Ibruofen) group (Tawfeg et al .,1993,2004),(Satynarayana et al ., 2004), (Bhitre et al ., 2008).

RESULTS

The leaf Extract of P. incarnate showed reduction in rat paw Edema Volume at a dose of 75mg/kg body weight which in comparable to standard drug (Ibruofen) . The reduction is the paw volume of rat with the time shown in Table-1,Figure-1.

Table 1: Anti inflammatory Activity of the leaf Extract of *P.incarnata* by using carageenan induced rat paw edema method

S.No	Group	Percentage in Paw Volume Mean + S.E. (N=6)				Percentage of Inhibition in Paw Volume			
		Post Insult Time of Assay on minutes							
		30	60	120	240	30	60	120	240
1	I	1.13±0.26	1.42±0.14	1.91±0.51	2.47+0.22	-	-	-	-
2	II	0.77±0.18	0.76±0.11	0.72±0.10	1.02±0.18	41.21	72.63	58.22	35.27
3	III	0.67±0.12	0.68±0.22	0.63±0.29	0.89±0.14	35.44	68.11	52.62	28.16
4	IV	0.49±0.22	0.44±0.17	1.03±0.15	1.68±0.17	34.82	68.79	53.01	28.27
5	V	0.85±0.16	0.85±0.22	1.01±0.27	1.02±0.30	28.55	58.32	61.01	61.00

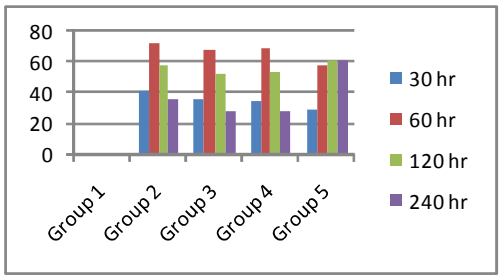

Figure-1 Anti inflammatory Activity of the leaf Extract of *P.incarnata* by using carageenan induced rat paw edema method

DISCUSSION

The results revealed that the leaf Extract of *P.incarnata* showed statistically significant anti-inflammatory activity at the dose level of 75mg/kg body weight and 50mg/kg body weight of Extract showed nearly equal anti-inflammartory activity as compared to standard Ibruofen. Prostaglandins play a major role in carrageenan induced inflammation which is highly sensitive to phenyl butazone, indomethacin and hydrocortisone. The mechanism of carrageenan induced paw edema which develops after carrageenin inflammation is a biphasic event. The initial phase is attributed to the release of histamine and serotonin. The edema maintained between the first and the second phase is due to kinin like substances. The second phase is said to be promoted by prostaglandin like substances(Vinegar et al .,1969). It has been reported that the second phase of edema is insensitive to drugs like hydrocortisone, phenylbutazone and indomethacin[2]. The leaf extract of *P.incarnata* produced anti-inflammatory activity due to the presence of phytosterol and flavonoids(Akilandeswari et al.,2001) .

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