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Anti-inflammatory effect of medicinal plants used by rural people of Azhagar Hills in Madurai district, Tamil Nadu, India

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Abstract

Anti-inflammatory is the property of a substance or treatment that reduces inflammation or swelling. Anti-inflammatory drugs make up about half of analgesics, remedying pain by reducing inflammation as opposed to opioids, which affect the central nervous system to block pain signaling to the brain. The present study was mainly focused on Medicinal plants of Rural areas used as Anti-inflammatory activity in Azhagar hills of Madurai district, Tamil Nadu, India. It has been shown that 24 Medicinal herbs belonging to 20 families are used as Anti-inflammatory activity. Traditional medicine system have been followed by rural people used to cure even Unknowing diseases with symptomatic. Traditional healers in rural areas have well identification of medicinal properties of medicinal plants through which diseases can be cured.

Keywords: medicinal plants, anti-inflammatory activity, Madurai District.

1. Introduction

Inflammation is a disorder involving localized increases in the number of leukocytes and a variety of complex mediator molecules. Prostaglandins are ubiquitous substances that indicate and modulate cell and tissue responses involved in inflammation. Their biosynthesis has also been implicated in the path physiology of cardiovascular diseases, cancer, colonic adenomas and Alzheimer's disease ^[1]. The process of inflammation is necessary in healing of wounds inflammation however if runs unchecked lead to onset of diseases like vasomotor rhinorrhoea, rheumatoid arthritis and atherosclerosis ^[2]. The ethnomedicinal values of plants form the basis of the herbal drug industry. India has contributed its knowledge of traditional system medicines (Ayurveda and Siddha) to develop herbal medicines with negligible side effects. The World Health Organization has also recognized the benefits of drugs developed from natural products ^[3]. In the present study revealed that medicinal properties of medicinal plants act as keen role in curing anti inflammation. The formulations and Mode of preparation has been followed by traditional healers of rural areas of Madurai district, Tamil nadu.

2. Experimental Methods

2.1 Details of the study sites

Madurai is located at 9.93°N 78.12°E. It has an average elevation of 101 metres. The Azhagar malai is a densely forested area, rich in biodiversity. In the forest are found rare trees of economic importance and also valuable medicinal plants. Some of these rare medicinal herbs have been used by the siddhars to cure diseases since ancient times.

2.2 Interview with informants

An extensive Survey was carried out in Madurai. The number of informants interviewed 15 (10Male, 5Female). The information of this study was collected through questionnaire method from the villagers, elderly persons, traditional healers who are residing areas of the study to collect data on medicinal plants commonly used by them. These include different common human ailments, their occurrence, symptoms, regular mode of treatment including herbal ones, plants and plant parts used for the treatment.

2.4 Botanical identification of plants

All the medicinal plants recorded during the field visits were botanically identified by referring Flora of Tamil Nadu Carnatic ^[10] and An Excursion Flora of Central Tamil Nadu, India ^[11].

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3. Results and Discussion

The Details of collected plants are enumerated with their

scientific name, family, local name, parts used, Diseases Cured were presented in Table 1.

Table 1: The Details of collected plants are enumerated with their scientific name, family, local name, parts used, Diseases Cured

S.NO	BINOMIAL NAME	FAMILY	LOCAL NAME(TAMIL)	Uses
1.	<i>Abrus precatorius L.</i>	Fabaceae	Gundumani	Leaf extract is used to treat inflammation and wound healing.
2.	<i>Acorus calamus L.</i>	Araceae	Vasambu	Powder of Rhizome used as anti inflammatory
3.	<i>Aegle marmelos L.</i>	Rutaceae	Vilvam	Root extract and stem bark used for wound healing as well as anti inflammatory
4.	<i>Allium cepa L.</i>	Liliaceae	Vengayam	Bulb has been widely used for inflammation.
5.	<i>Allium sativum L.</i>	Liliaceae	Poondur	Bulb juice is used to treat inflammation
6.	<i>Adenanthera pavonina L.</i>	Mimosaceae	Ani kundumani	Seed extract used to cure inflammation
7.	<i>Azadirachta indica A. Juss.</i>	Meliaceae	Vembu	Oil obtained from seed is used to treat inflammation
8.	<i>Acalypha indica L.</i>	Euphorbiaceae	Kuppaimeni	Leaf extract used as Anti inflammatory
9.	<i>Curcuma longa L.</i>	Zingiberaceae	Manjal	Rhizome powder mixed with coconut oil is used to treat inflammation.It is a powerful drug for using inflammation
10.	<i>Zingiber officinale L.</i>	Zingiberaceae	Inji	Rhizome extract is used to treat inflammation
11.	<i>Coriandrum sativum L.</i>	Apiaceae	kothumalli	Leaf extract and seed powder is used for inflammation
12.	<i>Cynodon dactylon L.</i>	Poaceae	Arugam pillu	Whole plant extract is used as powerful anti-inflammatory effect.
13.	<i>Carica papaya L.</i>	Caricaceae	Pappali	Leaf extract used to reduce inflammation
14.	<i>Cocos nucifera L.</i>	Arecaceae	Thennai	Coconut milk is used to treat renal inflammation.
15.	<i>Cassia auriculata L.</i>	Caesalpinaceae	Aavaarai	Flower extract is used to treat inflammation
16.	<i>Datura metel L.</i>	Solanaceae	Omathai	Seed extract is used to treat inflammation
17.	<i>Ficus racemosa L.</i>	Moraceae	Arasa maram	Bark extract is used to cure inflammation
18.	<i>Moringa oleifera Lam.</i>	moringaceae	Murungai	Powder and extract of Stem bark is applied externally to cure inflammation
19.	<i>Tamarindus indica L.</i>	Fabaceae	Puliambalam	Leaf paste is used for curing inflammation
20.	<i>Eclipta prostrata (L.)</i>	Asteraceae	Karisilankanni	Leaf extract is used for curing skin inflammations
21.	<i>Phyllanthus niruri L.</i>	Phyllanthaceae	Keelanelli	Leaf extract used as Anti inflammation and wound healing
22.	<i>Gymnema sylvestre(Retz)R.Br.ex Schutt</i>	Asclepiadaceae	Sirukurinjan	Leaf extract is used to treat inflammation
23.	<i>Hemidesmus indicus(L.)R.Br</i>	Asclepiadaceae	Nannari	Root powder is used for inflammation of skin and liver
24.	<i>Hibiscus rosasinensis L.</i>	Malvaceae	Semparuthi	Leaf extract used to reduce inflammation

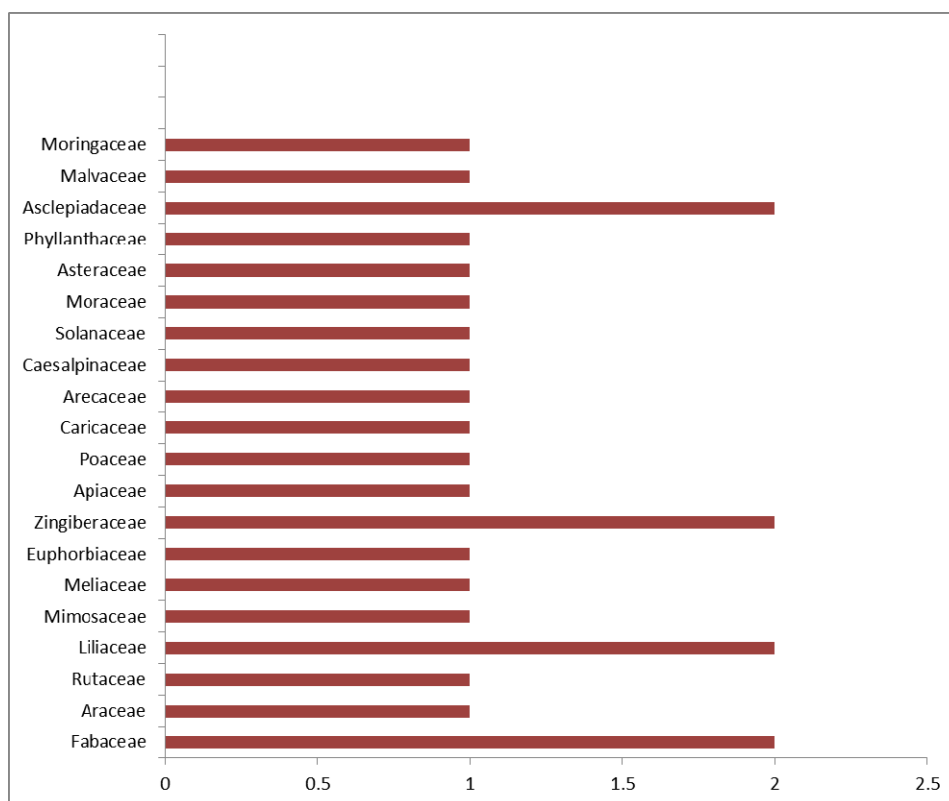


Fig 1: Families of Medicinal plants in Anti inflammation

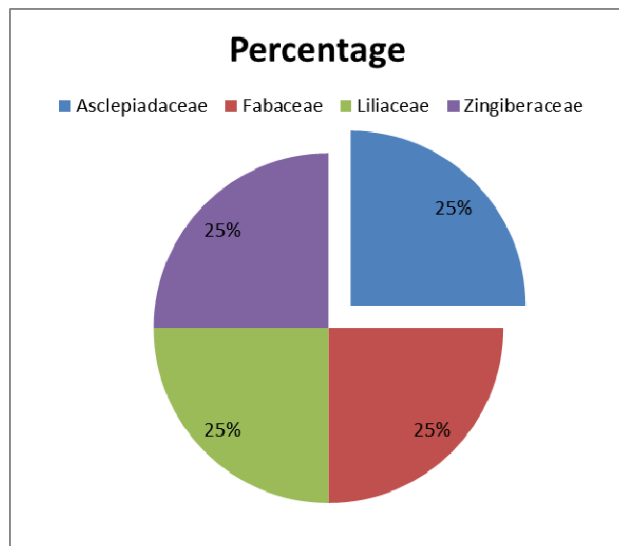


Fig 2: Dominant families of Medicinal plants in Anti inflammatory

The present investigation enumerated that total of 24 medicinal plants belonging to 20 families have been recorded. Among all the species Rutaceae, Liliaceae, Zingiberaceae and Fabaceae were dominant than other species. Different plant parts such as Root, Leaves, Seeds, Fruit, Wood bark, and Flowers were used for herbal preparation. The herbal preparation in the form of Decoction, Powder, Extract, Juice. Earlier findings showed that anti-inflammatory effect of Neem oil which is relevant to the current research work [6]. The current result also confirmed that therapeutic uses of *Curcuma longa L.* in anti-inflammatory activity [7]. *Rosa sinensis* (Hibiscus) - a versatile Indian origin plant [8], Anti allergic effect of Herbal product from *Allium cepa L.* (bulb) [9] also supports present investigation.

4. Conclusion

The present study concluded that traditional medicinal system play a major in anti-inflammatory activity in rural areas. So people who live in rural areas mainly depend on medicinal plants. The ancestor of traditional healer have been given great ideas about medicinal plants, Parts used, Diseases cured. In that way rural people followed ancient or traditional medicinal system. The value of medicinal plants to Human livelihood is essentially infinite. They obviously make fundamental contribution to human health. Medicinal plants can be symbolically very important to people.

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