

## DECIPHERING THE BOTANICALS IN THE 'IRULAPAMBUKADI CHOORNAM' AN ANTIDOTE AGAINST SNAKE BITE

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### ABSTRACT

To collect first-hand information about 'Irula Pambukadi Choornam' ('IPC') and its botanicals an antidote against snake bite. Ethnobotanical survey was conducted in different Irula settlements of Tamil Nadu, using a questionnaire. This study revealed a total of 10 antidote plant belongs to 9 genera and 9 families. The present investigation was aimed at conserving largely herbal drug knowledge and availing to the scientific world the plant therapies used as anti-venom in the society.

**Keywords:** Antidote, Ethnobotany, Irula Pambukadi Choornam.

### 1. INTRODUCTION

Venomous snake bites are well known medical emergencies in many parts of the world, exclusively in rural areas where agricultural workers and children are most affected. The incidence of snake bite mortality is particularly high in South East Asia (David, 2010). In India 35,000-50,000 deaths are reported due to snake bite each year (Dhanajaya, 2011).

Nature has provided a comprehensive stock dynasty of therapies to resolving ailments of mankind. Medicinal plants have been used for centuries as remedies for poisonous bites because they contain chemical components of therapeutic value. Traditional healing system plays an vital role in maintaining the physical and psychological well-being of the vast majority in many parts of the world especially in South Asian countries. Nearly 80% of people in developing countries depend on traditional medicines for primary healthcare, most of which are derived from the plants (Kaleel Basha and Sudharsanam, 2012).

Herbal medicine has been widely practiced throughout the world since ancient times. These medicines are safe and environmentally friendly. Tribes in general and South Indian tribes in particular are blessed with rich biological diversity of plants and a high degree of traditional knowledge about medicinal plants and their uses for various ailments of human being (Abu-Rabia, 2005).

The village folk, especially the tribal people are still using the natural resources accessible in their surrounds to treat various illnesses and other

ailments. Though they trust in tantra and mantra in incident of snake bite, they are using both mantra and management of plant drugs (Pradap *et al.*, 2010). For the treatment of snake bite they believe in tantra, mantra and herbal medicine is also administered.

The tribe is extremely earmarked and so the collection of ethnobotanical information is very difficult task. In Tamil Nadu, Irulas are a group of tribal community belongs to the Negrito race which is one of the main primitive vulnerable ethnic groups in India (Deepa *et al.*, 2002). Even today Irula local communities practice herbal medicine to cure a number of diseases particularly snake bite. Remedies are mostly prepared with native wild species which contain at least one bioactive compound (Felix *et al.*, 2004).

The indigenous traditional knowledge of Irula tribe, which has been transmitted orally for centuries, is fast disappearing due to the advent of modern technology and transformation of traditional culture (Ganesan *et al.*, 2004). Hence the present investigation was carried out to document the botanicals present in the 'IPC' an antidote against snakebite.

### 2. METHODOLOGY

From 2014-2015, Irula tribal villages were visited in different districts of Tamil Nadu. The herbal practitioners (Vaidyars) in those areas were interviewed and information on medicinal plants was collected (Fig.1 L). Thirty informants were interviewed to get authentic antidote composition, dosage of the drug, mode of administration and diet

restriction during treatment period. The result of this study reveals the botanical name, family, local name and part used of 10 medicinal plants (Table 1) used in the preparation of 'IPC' which is used by Irula tribe as an effective antidote against snake bite.

### 3. RESULTS

The 'IPC' is prepared out of 10 medicinal plants (Fig. 1 A-J) which are shade dried and grind well in a mortar and pestle. The fine powder thus

obtained is stored in air tight glass containers for the future use. The dosage of 'IPC' (Fig.1 K) for an adult individual is 20 grams and 10 grams for children. It is administered orally as dry powder in the morning and evening in empty stomach for 3 days. In the first day of the treatment, the patient will not be permissible to sleep. There is strict diet restriction throughout the treatment period, like salt should not be added in the food.

**Table 1. List of medicinal plant in the 'IrulaPambukadi Chooranam' used to treat snake bite.**

S.No.	Botanical name	Family	Local name	Part used
1.	<i>Acalypha indica</i> L.	Euphorbiaceae	Kuppaimeni	Whole plant
2.	<i>Alangium salvifolium</i> (L.f)	Alangiaceae	Alingil	Bark
3.	<i>Andrographis alata</i> Nees.	Acanthaceae	Periyanangai	Whole plant
4.	<i>Andrographis paniculata</i> Nees.	Acanthaceae	Siriyangai	Whole plant
5.	<i>Aristolochia bracteolata</i> Lam.	Aristolochiaceae	Aadutheandapalai	Whole plant
6.	<i>Azadirachta indica</i> (L.) Adr. Juss.	Meliaceae	Vembu	Bark
7.	<i>Corollocarpus epigaeus</i> Rotter.	Cucurbitaceae	Agasagarudan	Tuber
8.	<i>Enicostemma axillare</i> (Lam.) A. Raynal,	Gentianaceae	Vellaragu	Whole plant
9.	<i>Leucas aspera</i> Spreng.	Lamiaceae	Thumbai	Whole plant
10.	<i>Strychnos nux-vomica</i> Linn.	Loganiaceae	Yetti	Bark



**Figure 1. Medicinal Plants and Chooranam of Irulas against snake bite**

The 10 medicinal plants belong to nine genera in nine families of which four are herbs, three trees, two shrubs and one climber. Regarding the usage of plant parts, whole plant is used in six cases, bark of three plants and tuber of one plant (Table 1).

### 4. DISCUSSION

The 'IPC' used for snake bite treatment by Irulas possess some chemical compounds which inhibit the toxicity of snake venom. The credibility of this ethnobotanical information is supported by the experimental findings of six plants for their snake venom inhibiting property. The methanol extract of *Acalypha indica* leaves showed Russell's viper venom neutralizing property in rat model (Shirwaikar *et al.*, 2004). Similarly the alcoholic extract of *Andrographis paniculata* inhibits cobra venom in albino mice (Premendran *et al.*, 2011). Phospholipases are important component in snake venom. The aristolochic acid present in *Aristolochia bracteolata* (Wagner and Praksch, 1985) and *Andrographis alata* (Walter Martz, 1992) possess phospholipase inhibitory properties. Cobra and Russell's viper venom phospholipase A2 inhibited by the methanolic leaf extract of *Azadirachta indica* (Mukherjee *et al.*, 2008). In an *in vivo* study with albino mice, crude root extract of *Corollocarpus epigaeus* showed venom neutralizing activity (Chandrakala *et al.*, 2013).

## 5. CONCLUSION

Even though we have many drugs in antibiotics, anticancer and antidiabetic category, so far not even a single drug has been discovered to treat snake bite. The only therapy available for snake bite is the polyvalent anti-snake venom. The contributions of various traditional systems of medicine in modern drug discovery cannot be ignored. In this context further elaborative clinical work is necessary for the elucidation of active principles from these plants for drug discovery against snake bite.

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