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Ethnomedicinal Survey of Medicinal Plants Used for the Treatment of Diabetes and Jaundice Among the Villagers of Sivagangai District, Tamilnadu

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Abstract: The present study revealed that totally 12 and 10 modes of treatment were followed by the rural people of Sivagangai district to cure diabetes and jaundice respectively. The rural people of the study area were used 17 plants for diabetes and 12 for jaundice. Among them, 6 plants viz., *Azadirachta indica, Carum nothum, Cynodon dactylon, Lablab purpureus, Momordica charantia* and *Phyllanthus amarus* were used to cure both diabetes and jaundice. The plants were used either separately or in combination with other plants. These ethnomedicinal data may provide a base to start the search the new compounds related to phytochemistry, pharmacology and pharmacognosy. Attention should also be made on proper exploitation and utilization of these medicinal plants.

INTRODUCTION

The value of medicinal plants to the mankind is very well proven. It is estimated that 70 to 80% of the people worldwide rely chiefly on traditional health care system and largely on herbal medicines (Farnsworth *et al*., 1985; Farnsworth and Soejarto, 1991; Pei Shengji, 2002; Shanley and Luz, 2003). Nature has been a source of medicinal plants for thousands of year and an impressive number of modern drugs have been isolated from natural sources. Various medicinal plants have been used for years in daily life to treat disease all over the world. They have been used as remedies and for health care preparation. In fact plants produce a diverse range of bioactive molecules making them a rich source of different types of medicines. Higher plants as source of medicinal compounds have continued to play a dominant role in the maintenance of human health since ancient times (Farombi, 2003). Man has acquired methods of treating sickness using his local bio cultural environment.

Ayurveda and other Indian literature mention such uses of plants in treatment of various human ailments.

India harbours about 15 percent (3000 – 3500) medicinal plants, out of 20,000 medicinal plants of the world. About 90 percent of these are found growing wild in different climatic regions of the country (Singh, 1997). Scientific investigations of medicinal plants have been initiated in many parts of our country because of their contributions to health care. Ethnobotany and ethnomedical studies are today recognized as the most viable method of identifying new medicinal plants or refocusing on those earlier reported for bioactive constituents. It is interesting to note that most of the drugs derived or originally isolated from higher plants were discovered in an ethnobotanical or ethnomedicinal context. The tribal and rural people of various parts of India are highly depending on medicinal plant therapy for meeting their health care needs. This is attracting the attention of several botanists and plant scientists who directing vigorous researches towards the discovery or rediscovery of several medicinal plants along with their medicinal remedies for various diseases. Several workers were reported the utility of plants for the treatment of diabetes and jaundice (Goel and Bhattacharaya, 1981; Yaniv *et al*., 1987; Eddouks *et al*., 2002; Katz *et al*., 2007; Leach, 2007). In such a way, the present work was carried out to explore the medical remedies of some medicinal plants used by the rural people of Sivagangai district in Tamilnadu for the treatment of diabetes and jaundice.

MATERIALS AND METHODS

The entire area of Sivagangai District lies between 9º 30' N and 10º 30' N latitude and 77º 00' E and 78º 30' E longitude. The altitude of the study area is about 102 m (334 feet) above mean sea level. The district is spread over an area of about 4189 sq. km and is bounded on the North and Northeast by Pudukkottai District, on the Southeast and South by Ramanathapuram District, on the Southwest by Virudhunagar District and on the West by Madurai District. The district receives an annual rainfall is about 635 – 1019 mm. The maximum and minimum temperature varies between 26º and 38º.

Interviews and detailed personal discussions were conducted with the local people who have unique knowledge about the treatment for diabetes and jaundice. A total of more than 100 respondents were interviewed, these included males and females that depended on plant as sources of medicines either for self – medication or for treating others. Flora of Tamilnadu Carnatic (Matthew, 1983 – 1986) and An Excursion flora of central Tamilnadu (Matthew, 1991) were used to ascertain the nomenclature of the plant species.

ENUMERATION OF ETHNOMEDICINAL DATA

A) For diabetes:

1. Leaf of *Gymnema sylvestre* (Retz.) R. Br. ex Roemer & Schultes (Asclepiadaceae – 'Sarkkaraikolli') is dried and powdered. The powder soaked in water for few hours and then filtered. The filtrate is given to drink with water.

2. Rhizome of *Curcuma longa* auct. non L. (Zingiberaceae – 'Manjal') is dried and powdered. The powder soaked in water for few hours and then filtered. The filtrate is given to drink with milk.

3. Fruits of *Momordica charantia* L. (Cucurbitaceae – 'Paagarkkaai') and *Lablab purpureus* L. (Fabaceae – 'Avarai') are cooked in the fruit extract of *Syzygium cumini* (L.) Skeels (Myrtaceae – 'Naaval') with little amount of water and eaten.

4. Flowers of *Cassia auriculata* L. (Caesalpiniaceae – 'Aavaaramboo') are eaten raw.

5. Ripened fruit of *Coccinia grandis* (L.) J.Voigt. (Cucurbitaceae – 'Kovai') is eaten daily.

6. Fruits of *Caesalpinia pulcherrima* (L.) Sw. (Caesalpiniaceae – 'Mayilkondrai') are dried and powdered. The powder is given with milk or honey.

7. Leaf paste of *Crateva religiosa* auct. non Forster f. (Capparidaceae – 'Maavalingam') is applied on legs and hands for about 1 – 3 weeks.

8. Leaf of *Andrographis paniculata* (Burm. f.) Wallich ex Nees (Acanthaceae – 'Siriyaanangai') is eaten raw.

9. Stem barks of *Ficus benghalensis* L. (Moraceae – 'Aal') and *Caesalpinia pulcherrima* (L.) Sw. (Caesalpiniaceae – 'Mayilkondrai') are powdered. The powder is given to drink with milk.

10. Leaf of *Azadirachta indica* Andr. Juss. (Meliaceae – 'Vembu') and Fruits of *Carum nothum* Cl. (Apiaceae – 'Omam') are dried and powdered. The powder is given in milk.

11. Leaves of *Piper betle* L. (Piperaceae – ‘Vettrilai’), *Cynodon dactylon* (L.) Pers. (Poaceae – ‘Arugambull’), *Azadirachta indica* Andr. Juss. (Meliaceae – ‘Vembu’) and *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae – ‘Keelaanelli’) are dried and powdered with the stem park of *Syzygium cumini* (L.) Skeels (Myrtaceae – ‘Naaval’). The powder is boiled in water and the extract is given.

12. Leaf extracts of *Azadirachta indica* Andr. Juss. (Meliaceae – ‘Vembu’), and *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae – ‘Keelaanelli’) are mixed and given.

B) For jaundice:

1. Leaves of *Cynodon dactylon* (L.) Pers. (Poaceae – ‘Arugambull’) and *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae – ‘Keelaanelli’) are grounded with the fruits of *Piper nigrum* L. (Piperaceae – ‘Milagu’) and extracted. The extract is given.

2. Root of *Hemidesmus indicus* (L.) R. Br. (Asclepiadaceae – ‘Nannaari’) is powdered and given with honey.

3. Leaf of *Leucas aspera* (Willd.) Link (Lamiaceae – ‘Thumbai’) is pasted and applied on head.

4. Very young leaves of *Azadirachta indica* Andr. Juss. (Meliaceae – ‘Vembu’) are fried with *Carum nothum* Cl. (Apiaceae – ‘Omam’) and salt and powdered. The powder is given in milk.

5. Leaves of *Eclipta alba* L. (Asteraceae – ‘Karappaan’), *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae – ‘Keelaanelli’) and *Leucas aspera* (Willd.) Link (Lamiaceae – ‘Thumbai’) are grounded and extracted. The extract is given.

6. Interior stem portion of *Musa paradisiaca* L. (Musaceae – ‘Vaazhai’) and fruits of *Lablab purpureus* L. (Fabaceae – ‘Avarai’) are prepared as a vegetable curry and given with diet.

7. Leaf powder of *Aegle marmelos* (L.) Corr. Serr. (Rutaceae – ‘Villvam’) is given in milk of Goat.

8. Leaf extracts of *Cynodon dactylon* (L.) Pers. (Poaceae – ‘Arugambull’) and *Phyllanthus amarus* Schum. & Thonn. (Euphorbiaceae – ‘Keelaanelli’) are mixed and given.

9. Interior portion of *Musa paradisiaca* L. (Musaceae – 'Vaazhai') is dried and powdered. The powder is given with honey.

10. Fruits of *Momordica charantia* L. (Cucurbitaceae – 'Paagarkkaai') are dried. The dried fruit pieces are fried and given with normal diet.

RESULTS AND DISCUSSION

The present study revealed that totally 12 and 10 modes of treatment were followed to cure diabetes and jaundice respectively, by the rural people inhabiting in Sivagangai district. Various people inhabiting in different localities of Sivagangai district followed different mode of treatment as their own wishes. They were used 17 plants for diabetes and 12 for jaundice. Among them, 6 plants viz., *Azadirachta indica, Carum nothum, Cynodon dactylon, Lablab purpureus, Momordica charantia* and *Phyllanthus amarus* were used to cure both diabetes and jaundice. The plants were used either separately or in combination with some of other plants. Most of these plants are commonly available in natural sources in the district and a few are obtained from local dealers. Taking the medicine as infusion either with water, milk or honey is the major mode of treatment for both the diseases.

CONCLUSION

Due to the growing importance of ethnobotanical studies, it is necessary to collect the informations about the knowledge of traditional medicines, preserved in tribal and rural communities of various parts of India before it is permanently lost. Diabetes and Jaundice are one of the common diseases in rural areas of Sivagangai District. Having the above facts in mind, an attempt was made to explore the medical remedies of some medicinal plants used by the rural people of Sivagangai district in Tamilnadu for the treatment of diabetes and jaundice. These ethnomedicinal data may provide a base to start the search the new compounds related to phytochemistry, pharmacology and pharmacognosy. Therefore, Isolation of active principles, pharmacological investigations, and the potent anti–microbial activity should be studied. This may provide new sources of herbal drugs and help to understand the molecular basis of their activities. Moreover, it may further be mentioned that over exploitation of these species in the name of medicine may lead some species ultimately to the disappearance in future. Therefore, attention should also be made on proper exploitation and utilization of these medicinal plants.

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