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ANTILITHIATIC ETHNOMEDICINAL PLANTS USED BY THE NATIVE PEOPLE OF ANANTAPUR DISTRICT, A.P

N. V. N. LAKSHMI

Department of Botany, P.V.K.K. P.G. College, Anantapur, Andhra Pradesh, India

ABSTRACT

Anantapur district is having less forest area but with rich medicinal flora. Native people are having good expertise in effective use of medicinal plants. A survey was conducted to document the ethnobotanical knowledge of plants used in the treatment of kidney stones or urolithiasis. Valuable information about potential crude drug yielding plants was collected from local people, tribal people, herbalists, bare foot doctors and healers. Thirty one popular medicinal plant remedies used in the treatment of renal calculi are presented along with their botanical and local names, part or parts used, mode of drug preparation and administration. Most reliable crude drug remedies were enumerated.

KEYWORDS: Ethnobotanical, Traditional Knowledge, Herbal Plants, Renal Calculi, Urolithiasis, Anantapur District

INTRODUCTION

In this modern age, majority of people are affected by urinary tract infections and kidney stones owing to unhealthy food habits. Indigenous systems like Ayurveda have lot of literature and prescriptions related to the stone problem (Mishra &Kumar, 2000). Many Unani remedies were also evaluated by the scientists for their efficacy (Zaidiet al, 2006). Large populations of India are currently facing with the problem of urolithiasis because of change in lifestyle and dietary habits (Anitha & Sharma, 2010). A kidney stone is a hard mass of various substances that are naturally found in the urine become highly concentrated. Normally substances like calcium, oxalate and phosphorus when accumulated in high concentrations promote the formation of stones in the kidney, urinary tract or in bladder (Felix et al, 2006).

Certain food materials may promote stone formation in people and especially people who are having a family history of hypercalciuria, hyperoxaluria, hyperuricosuria and other kidney related problems are highly prone. There are four major types of kidney stone formations normally found in the body (Felixet al, 2006). Calcium stones are the most common type found in two different forms which are calcium oxalate and calcium phosphate. Thus formed stones may remain in the kidney or pass down the urinary tract without even knowing. In majority of cases small stones may pass out on its own without causing pain but large stones get stuck along the urinary tract and can block the flow of urine, causing severe pain and colic.

Several modern drugs and methods are available in the present system of medicine, but traditional medicine is also having good hold in curing the problems. People living in remote areas have excellent knowledge about medicinal plants and their utilization (Prachi, et al., 2009). To preserve this valuable information before it is lost forever, proper documentation is required. This major task has been taken over by many ethno botanists and they are successfully going all over India in this pursuit and have put them down in black and white (Ghatapanadi et al, 2010; Punjani, 2010; Sharma et al, 2011; Kumkum & Ranjan, 2012).

Anantapur is the largest district, spanning over 13^0 $14^{'}$ and 15^0 $14^{'}$ Northern latitude and 76^0 $26^{'}$ and 78^0 $26^{'}$ Eastern longitude with a geographical area of 19,134.91 Sq.km. Anantapur district is one of the four districts of Rayalaseema region. The district is chronically drought affected area, which is located in the southern part of Andhra Pradesh. The forest cover is less than 5% and with 4% of tribal population. The area was previously explored by different botanists (Reddy et al, 1989). People of Anantapur are having good knowledge of medicinal plants and their uses. Majority of people especially in rural areas still rely on herbal medicineson par with modern medication.

METHODOLOGY

A survey was conducted as per prescribed standard methodology adopted for ethnobotanical studies (Jain, 1989). Regular field trips were conducted in different seasons of the year. The plants were collected with the help of headmen of tribal and native people, traditional healers and other knowledgeable old persons. The information about plants used in treating kidney stones were documented along with vernacular names, plant parts used and formulation of drug, preparation of drugs, dosage and mode of administration. To get the first hand information several discussions were conducted with the resource persons and also to verify the authenticity of the information.

RESULTS

During the survey thirty one (31) plant species belonging to twenty three (23) families were documented as potential remedies in treatment, cure and prevention of kidney stones. Whole information is enumerated alphabetically with their botanical, family and local name and mode of administration.

- *Achyranthes aspera* L.(Amaranthaceae)Local Name: Uttareni. 25 ml leaf extract is given twice a day for fifteen days.
- *Aerva lanata* (L.) Juss. (Amaranthaceae) Local Name: Kondapindiaaku. Root decoction or whole plant extract, given twice a day for a month.
- *Aerva javanica (*Burm.f.) Juss. ex Schult. (Amaranthaceae) Local Name: Peddapindiaaku. 15 g whole plant paste mixed with water and is given once a day for 15 days.
- *Amaranthus spinosus* L.(Amaranthaceae) Local Name: Mullathothakoora. 3g whole plant ash mixed with water and is given twice a day for one month.
- *Areca catechu* L. (Arecaceae) Local Name: poka. 3g of nut powder is given daily twice for a week.
- *Azadirachta indica* A. Juss(Meliaceae) Local Name: vepa. 2 g Leaf ash is given with water once a day for a month.
- *Basella alba* L. (Basellaceae) Local Name: Bacchali. 25 ml Leaf extract is given early morning on empty stomach as long as necessary.
- *Benincasa hispida* (Thunb.) cogn. (Cucurbitaceae) Local Name: Boodida Gummadi. 50 ml fruit extract mixed with jaggery, given twice a day for a week.
- *Boerhavia diffusa* L. (Nyctaginaceae) Local Name: Atikamamidi. 3 g of root and 3 g *of phyllanthusamarus* root pounded with milk and given once daily for 15 days.

- *Borassus flabellifer* L. (Arecaceae) Local Name: Taati. Jelly like kernel of fruit eaten once a day to cure and prevent stones
- *Carica papaya* L. (Caricaceae) Local Name: Parinkaaya. Fruit is eaten to prevent stone formation.
- *Citrus aurantiifolia* (Christm.) Swingle (Rutaceae) Local Name: Nimma. Fruit juice mixed with 200 ml of water and sugar candy, given daily.
- *Cocos nucifera* L. (Arecaceae) Local Name: Kobbari. 30 ml flower extract mixed with 50 ml of goat milk and sugar candy, given once a day.
- *Coldenia procumbens* L. (Boraginaceae) Local Name: Hamsapaadi. Whole plants boiled with *pedalium murex* in water and decoction is given once a day for 15 days.
- *Cucumis melo* L. var. *melo*(Cucurbitaceae) Local Name: Siddhatum. 5-10 g fruit peel paste is mixed with tender coconut water and given once a day for 15 days.
- *Curcuma longa* L. (Zingiberaceae) Local Name:pasupu. 5 g of turmeric powder mixed with 10 g jaggery and given twice a day for one month.
- *Euphorbia hirta* L. (Euphorbiaceae) Local Name: Reddivarinanubalaaku. 100 ml whole plant extract mixed with 200 ml goat milk given once a day for 30 days.
- *Gossypium herbaceum* L. (Malvaceae) Local Name: Patthi. 5– 10 raw fruits cooked in residual hot coals and pounded with water and given once a day for one week.
- *Helianthus annuus* L. (Asteraceae) Local Name:Proddutirugudu. 20 g of roots pounded with 100 ml of butter milk and given once a day for 15 days.
- *Macrotyloma uniflorum* (Lam.) Verdc. (Fabaceae) Local Name: Ulava. 2-5g seed power or in 100 ml seed decoction is given twice a day for one month.
- *Manilkara zapota* (L.) P. Royen (Sapotaceae) Local Name: Sapota. 3-5*g*of kernel paste mixed with 50 ml water and given twice a day for one month.
- *Melia azedarach* L. (Meliaceae) Local Name: Turakavepa. 50 ml fresh leaf extract is given once a day for 20 days.
- *Merremia emarginata* (Burm. f.) Hallier f. (Convolvulaceae) Local Name: Yelakachevikoora. 50 ml whole plant extract given twice a day for 15 days.
- *Moringa oleifera* Lam. (Moringaceae) Local Name: Munaga. 30 ml root bark decoction is given twice a day for 15 days.
- *Musa paradisiaca* L. (Musaceae) Local Name: Arati. 50 ml pseudo stem core extract, given once a day for 40 days.
- *Pedalium murex* L. (Pedaliaceae) Local Name: Peddapalleru. 4 g fruit powder is given with sheep milk once a day for 7 days.

- *Pongamia pinnata* (L.) Pierre (Fabaceae) Local Name: Kaanug. 25g seed powder mixed with 50 ml cow milk and given once a day for 20 days.
- *Raphanus sativus* L.(Brassicaceae) Local Name: Mullangi. Dried tuber pieces burnt to ashes and 3 g of this ash mixed with water given once a day.
- Tribulus terrestris L. (Zygophyllacea) Local Name: Palleru. 50ml root decoction, given twice a day for 15 days.
- *Vitis vinife*ra L. (Vitaceae) Local Name: Draksha. 20 ml leaf extract is given twice a day for 20 days or 5-15 g stem ash given 2-3 times a day.
- *Zea mays* L. (Poaceae) Local Name: Mokkajonna. 50 ml of corn silk extract is given once a day for one month.

CONCLUSIONS

The uses of traditional medicine have an everlasting charm in treating various complicated ailments. It is always a popular system of medicine among folk people all over the world. Plants are an important source of herbal medicine (Tiwari, 2008). According to latest information more than 70 % of the world population depend on traditional or folk remedies to cure various diseases. The present study area is previously explored by different ethnobotanists (Reddy et al, 1989), but less information is available about plants used for urolithiasis. Current studies reveal a clear vision and knowledge of the natives about medicinal plants and their uses, hence potential therapeutic remedies were collected.

Many modern medicines and treatments are available in the market for stone diseases but still rural / tribal people depend on plants and crude drugs as their personal remedies to treat themselves. Such type of ethnobotanical surveys help scientists to evaluate the efficacy of folk claims (Christina, 2005; Awari et al, 2009; Jha et al, 2011; Sachan et al, 2011). They also help the scientists to design new formulations for future use. Many of these plants are easily available in their vicinity and are cost effective (Prachi et al, 2009), hence many people even today have strong belief in herbal and crude drugs and use them as first option. This shows their tremendous knowledge about diseases and remedies.

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