

Study of medicinal plants in Aravali regions of Rajasthan for treatment of Kidney stone and Urinary tract troubles

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Abstract: This article represents traditional use of the plants for treatment of kidney stone and urinary tract troubles of various fresh plants which is found as well as used traditionally in Aravali region of Rajasthan. Various plant species mostly used in various diseases. It was found that all the plant parts or extracts used in treatment of kidney stone and urinary tract were applied locally and was found to possess good healing property. Urinary tract and Kidney stone ailments have affected human beings since antiquity. They are a major problem and an important cause of kidney failure in India. This is an entity which has high morbidity and low mortality but having serious and significant socio-economical impact. In present investigation we have observed that extract of leaf and whole plant is used to cure kidney stone complications. The detailed study to explore the ethno-botany of medicinal plants of Aravalli hills of Rajasthan was undertaken during the survey of hills.

Key words: kidney stone, local tribal, urinary tract, Aravalli hills, Rajasthan, Traditional uses.

Introduction:

Plants have been an important source of precursors and products used in a variety of industries, including those of pharmaceuticals, food, cosmetics and agrochemicals. The continuing search for new drugs has seen researchers looking to the natural world for potential products. On the other hand the traditional medicines are enjoying an upsurge in popularity because of their low or no residual toxicity. Initially the plants are the main part of folk medicines. Gradually the folk medicines led to the rise of traditional system of medicine like Ayurveda in India. It is very important to show an interest in indigenous system of medicine and traditional herbal remedies which are regarded as quite safe with no side effects and should be cost effective, readily available and easily affordable¹. People those are living in interior and inaccessible remote rural areas have excellent knowledge about medicinal importance of the local flora. People in such areas of the district have been traditionally using indigenous folk remedies to cure Urolithiasis for generation. Because of prompt and positive effect of herbal treatment they have strong

faith in their own folk medicinal preparations or crude formulation.

The prevalence of Kidney stones and urinary disorders are 1-5%. Many modern medicinal therapies like surgical techniques, shock waves and medicines are available for the treatment of this disease but they are very expensive and having many side effects. So there is no suitable medical therapy is available for such stone disorder, it is very important to show an interest in indigenous system of medicine and traditional herbal remedies which are regarded as quite safe with no side effects and should be cost effective, readily available and easily affordable. Kidney stones and urinary disorders are most painful conditions and have been affected people for several centuries. Ancient Vedic literature describes stones as Ashmari. A large population of India suffers from urinary tract and Kidney stones, formed due to deposition of Calcium, Phosphate and oxalates. These stones may persist for indefinite time, lead to secondary complications causing serious consequences to patient life. It is very painful and proper cure is needed to get rid of the problem². Depending on where they are

located, kidney stones are known as Urinary calculi, Urinary tract stone disease, renal calculi, Nephrolithiasis, Ureterolithiasis and Urolithiasis.

Appropriate and timely treatment of kidney stones can prevent severe complications such as kidney failure. Stone in the urinary tract are common disorders because urine is a chemical solution that contains a large number of chemical substances. These substances can crystallize easily and then grow in size to form stones³. Though treatment of urinary tract and kidney stone is revolutionized by the development of non invasive methods of stone disruption but the patients always try to refrain from surgical procedures. Moreover, it also carries the factors like high cost, availability, side effects etc: the recurrence rate is approximately 50-80%⁴. As no suitable medical therapy is available for such stone disorders, it is imperative to search for some new or less known medicinal plants, which are potential source for new bioactive compounds of therapeutic value.

Rajasthan is the largest state in the North-Western part of India. Geographically it lies between 23°3' to 30°12'N longitude and 69°30' to 78°17'S latitude. The Aravalli system of mountain dominates the southern parts of Rajasthan. The climate of these hills is typically monsoonic in character. About 12.44% of the population in Rajasthan belongs to tribes such as the Bhil, Bhil-Meena, Damor, Dhanka, Garasia, Kathodi, Kokna, Kolidhor, Naikara, Patelia, Meena, Seharia and reside in remote areas devoid of basic infra-structure facilities. Nomadic tribes (Banjara, Gadolia-Lohar, Kalbelia, Sikligar, Kanjar,

Sansi, Bagri) further enrich the ethnic heritage of Rajasthan. These ethnic groups are widely distributed throughout the state and have considerable communication with each other. As a result, most of the ethanobotanical information is passed by one group to the other.

Experimental:

The surveys in search of medicinal plants from tribal areas were conducted with the help of rural people, local vaidis in the particular region. The research was clearly shown that tribal and rural people of Rajasthan still depend on traditional healers and medicine men.

During the survey of villages, information about wild medicinal plants used by the local people as kidney stone and urinary troubles treatment was obtained from the villagers and vendors of such items. Information was also collected on quantity, gathered parts used and the method of preparation local plant name and their botanical names were identified from books. Many medicinal plants and their parts are used in kidney stone and urinary troubles treatment without much preparation. The number of plants that find very useful in the treatment of kidney stone was recorded during the course of his survey of sacred groves of the district. The information has been counterchecked with that available in other places, the author himself proved most of the plants (Table 1).

Table 1: List of plants used for the treatment of kidney stone and urinary tract troubles:

S. No.	Name of Plants	Common name	Family	Part used	Medicinal uses
1	<i>Abutilon indicum</i> (L.) Sweet	Jhumka	Malvaceae	Seed and leaf extracts	Extract is given for urinary disorders
2	<i>Abutilon indicum</i> (Linn.)	Kanghi	Malvaceae	Leaves	Juice taken twice daily for two weeks
3	<i>Ageratum conyzoides</i> L.	Gana gaaju	Asteraceae	Leaves	Leaf extract given twice a day
4	<i>Amaranthus caudatus</i> L.	Love lies bleeding	Amaranthaceae	leaves	Extract is taken in kidney stone
5	<i>Aerva lanata</i> (L.) Juss.ex Schult	Pindikura	Amaranthaceae	leaves	Plant extract with <i>Cuminum cyminum</i> fruits and sugar is given for 10 – 15 days to cure kidney stone.
6	<i>Amaranthus spinosus</i> L.	Jangali chauli	Amaranthaceae	Root	Root paste use for reduces irritation in urinary duct
7	<i>Amaranthus viridis</i> L.	Mariro	Amaranthaceae	All parts	Given to cure kidney stone
8	<i>Asphodelus tenuifolius</i> Cav.	Piazi	Liliaceae	leaves	Decoction of leaves

9	<i>Beta vulgaris L.</i>	Ullam gadda	Amaranthaceae	Rhizome	Daily two glass of rhizome juice for seven days to cure kidney stone
10	<i>Bombex ceiba</i> Linn.	Silk cotton tree	Bombacaceae	Stem and bark	Given for urinary problems
11	<i>Borhaavia diffusa</i> Linn.	Bishapra	Nyctaginaceae	Root	Root decoction is taken daily for one month in kidney stone
12	<i>Ceropegia bulbosa</i> Roxb.	Khadula	Asclepidaceae	Tubers	Decoction of tubers orally to get rid of urinary bladder stone
13	<i>Chenopodium album</i> Linn.	Chilua	Chenopodiaceae	Leaves	Cooked leaves as a vegetable given in urinary trouble
14	<i>Corbichonia decumbens</i> (Forrsk.) Jacq		Molluginaceae	leaves	Crushed leaves given orally
15	<i>Costus speciosus</i> (Koen.) Sm.	Mahalakri	Costaceae	Tubers	Decoction of tubers orally for urinary complaints
16	<i>Digera muricata</i> (L.) Mart.	Lesua, Latmahuria	Amaranthaceae	Leaves	Once in a day
17	<i>Diospyros melaoxylon</i> Roxb.	Timru, tendu	Ebenaceae	Fruit and flower bark	Fruit and flower bark powder is used in urinary tract disorders
18	<i>Equisetum debile</i> Roxb.	Jod tod ki ghas	Equistaceae	All parts	Whole plants juice along with 1 gram <i>Piper nigrum</i> Linn. Twice a day for 7 days
19	<i>Gomphrena celosioides</i> Mart.	Gomphrena weed	Amaranthaceae	Whole plant	Juice along with <i>Piper nigrum</i> Linn. And lemon juice twice a day for 10 days
20	<i>Grewia flavescens</i> A. Juss	Kali-Siali	Tiliaceae	Root powder and decoction of roots	For removal of stops bleeding in urinary tract
21	<i>Pedaliium murea</i> Linn. (Pedaliaceae)	Dakhi-gokhru	Pedaliaceae	Fruits	Decoction of fruits used for continuance of urine and other complaints of urinary system
22	<i>Ricinus communis</i>	Arandi	Euphorbiaceae	Root	Root decoction along with half gram sunthi + one gm of heeng + common salt given twice a day for 7 days
23	<i>Solanum surattense</i> Burn.	Ber kaleli, neeli kateti	Solanaceae	Root powder	Root powder + curd given daily for 2 weeks
24	<i>Tribulus terrestris</i> Linn.	Gukhru	Zygophyllaceae	Leaves	Used in treatment of kidney stone
25.	<i>Tridex procumbens</i> L.	Molymehndi	Asteraceae	Leaves	Leaf paste is used taken for kidney stone
26	<i>Tubiflora acaulis</i> (L.F.) Kuntze	Patta chatta	Acanthaceae	Leaf	Leaf powder with water

Result and Discussion

During present research investigation an attempt has been made to explore the treasure trove of traditional medicinal plants used for curing various ailments. The ethanobotanical information on such medicinal plants is not only important for the tribals but for the entire world also.

Kidney stone and urinary tract disorders are treated with some plants formulations. From the literature we come to know that the similar studies have been carried out in some plants ex. *Beta vulgaris* L., *Avera lanata* (L.) Juss. Ex Schult⁵, *Tridax*

procumbens L.⁶, *Ageratum conyzoides* L.⁷, *Dichanthium foveolatum* (Del.) Roberty.⁸, *Ceropegia bulbosa* Roxb.⁹, *Tribulus terrestris* Linn.¹⁰, *Pedaliium murea* Linn., *Ricinus communis*¹¹.

Thus ethanobotanical studies clearly defined that tribal knowledge of medicinal plants is important not just for tribal themselves but for the entire world.

Leaves are used as crude drug with maximum frequency and seed and flower part are used with minimum frequency by tribals and rural people of Rajasthan.

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