

Herbal formulations used in the treatment of kidney stone by Korku tribes of Ambabarva, District Buldana, Maharashtra, India

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Abstract

The study area is the part of Melghat tiger project which is situated in Satpuda range. Ambabarva wild life sanctuary is the northern part of Maharashtra and southern part of Madhya Pradesh. The work is based on medicinal plants which are usually practice by Korku and Bhil tribes from the Ambabarva in the treatment of kidney stone. In Buldana District kidney stone is the most prevalent disease. Tribal communities basically depend on locally available plants to cure their various ailments. Traditional healers of this region used various plant species in the treatment of kidney stone. Authors attempt to procure information about plant species which are practiced by the tribes of this region in the treatment of kidney stone.

Keywords : Herbal, Korku Tribes, Kidney stone, Ambabarva wild life sanctuary, Buldhana, Maharashtra, India

Introduction

Ambabarva is bounded by Jalgoan Jamod tahasil, district Buldana. It is situated in Satpuda range. It is the northern part of Maharashtra and bordering Madhya Pradesh in the North and East. This area Geographically located in latitude between 21° 44' N and 21° 08' N, longitude: between 76° 39' E and 77° 31' E. The total forest area of Ambabarva is 127.11 sqkms areas. It is declared as wild life sanctuary notified in 1973-74. From the northern end of Melghat tiger reserve the "Tapi" river flows through the forest which lies in catchment area of river system.

The characteristic feature of the study area is dry deciduous forest. For day to day requirement man is dependent on nature. So, nature has healing properties. In Ancient days, man has been using plant remedies to cure his ailments.

Kidney is the largest filtration organ of the body. The problem of urinary stone or kidney stone is very ancient one and many remedies have been employed during the ages. These stones are found in all part of urinary tract, kidney, ureter urinary bladder etc.

Kidney stone or urolithiasis is the condition where urinary calculi are formed in the urinary tract. It is a common disorder estimated to occur in approximately 12% of the population, with a recurrence rate of 70-81% in males, and 47-60% in female. It causes serious health problems such as severe pain, urinary tract obstruction and infection that adversely affect well-being of individuals. kidney stone formation or urolithiasis is a complex process that occur due to imbalance between promoters and inhibitors in the kidneys. The Factor affecting stone formation are urine output (hence the concentration). The concentration of specific constituent urine pH, and infection or damage within the urinary tract. [1]

Methodology

For the documentation of ethno-medicinal information and collection of plant material several surveys were carried out during 2015 -2016 with the help of local herbal medicinmen of Ambabarva, Jalgoan Jamod tahasil, district Buldana, Maharashtra. The data presented here is based on personal observations and interviews with herbal practitioners (viz. medicine, hakims and old aged people) and methodology is based on the methods available in literature [2] and [3]. The medicinal utilities of plant species along with mode of administration is procured from tribal healer and experience herbal medicinmen in the region who practice crude plant drugs to cure kidney stone. Herbariums were prepared and plant identification was done by using regional floras and authenticated by

taxonomist. The collected information from the herbal healers of the region were compared with published literature [4-6].

Scientific names of the plant species with local name, family, parts used to cure kidney stone are given in the following table 1.

Discussions and Conclusion

The information of 46 ethno-medicinal plant species belonging to 31 families have been given which are used by the herbal healers of Ambabarva to cure kidney stone. Kidney stone or Urolithiasis is the condition where urinary calculi are formed in kidney or in urinary tract. It is a common disorder estimated to occur in approximately 12% of the population, with a recurrence rate of 70-81% in males, and 47-60% in female. It causes serious health problems such as severe pain, Urinary tract obstruction and infection that adversely affect well-being of individuals.

Though the treatment of kidney stone has been revolutionized by the development of non-invasive methods of stone disruption but patients always try to refrain from surgical procedures, moreover, it also carries the factors like high cost availability, side effects, etc. To treat this disorder, various drugs are used. Even improvement in medical techniques has developed invasive method of stone disruption like lithotripsy and surgical methods. But these methods are costly non-affordable to the poor section and the re-occurrence rate is also high (50-80%) The safest and cheapest remedy for the treatment includes the use of herbal formulations. Traditional herbal remedies which are regarded as quite safe, with less or no side effects, cost effective, readily available and easily affordable.

The plant species used by the medicinmen *Bryophyllumpinnatum* (Lam.) Oken., Prachi, *et al.*, [7], *Amaranthusspinosa* L., and *Tribulusterrestris* L., Ghatapandit *et al.*, [8] *Achyranthusaspera* L., Aggarwal *et al.*, [9] *Ensetesuperbum* Roxb., *Dolicandrone falcate* Seem.

Table 1: Medicinal plant used for kidney stone

Sr. No.	Plant name	Family	Plant part Used	Local name
1	<i>Abrus precatorius</i> .L	Fabaceae	Leaf juice	Gunj
2	<i>Abutilon indicum</i> (Link) Sweet	Malvaceae	Leaf juice	Petari/ Atibala
3	<i>Achyranthes aspera</i> L.	Amaranthaceae	Root	Aghada
4	<i>Argemone maxicana</i> L.	Papaveraceae	Root	Satyanashi
5	<i>Asteracantha longifolia</i> Nees.	Acanthaceae	Seed	Talimkhana
6	<i>Anthocephalus cadamba</i> Miq.	Rubiaceae	Stem bark	Kadamb
7	<i>Amaranthus spinosa</i> L.	Amaranthaceae	leaf	Katerichavali
8	<i>Amaranthus viridis</i> L.	Amaranthaceae	leaf	Jangalichavali
9	<i>Bauhinia racemosa</i> Lam.	Caesalpiniaceae	Stem bark	Kanchan
10	<i>Boerhaavia diffusa</i> L.	Nyctaginaceae	Root	Punernava
11	<i>Bombax ceiba</i> L.	Bombaceae	Corm	Semal
12	<i>Bryophyllum pinnatum</i> (Lam) Oken	Crassulaceae	Leaf juice	Patari
13	<i>Creteva nuroela</i> (Buch.-Ham.)	Capparaceae	leaf	Yavarna
14	<i>Cyathocline purpurea</i> (Buch.-Ham.ex D.Don) Kuntze	Asteraceae	Root	Dagadphodi/Gangotra
15	<i>Celosia argentea</i> L.	Amaranthaceae	Seed	kaduu
16	<i>Citrus media</i> L.	Rutaceae	fruit	Khatta nibu
17	<i>Clitoria ternate</i> L	Papilionaceae	leaves	Aparajita /gokarna
18	<i>Ensete superbum</i> .Roxb.	Musaceae	Seed	Jangali Keli
19	<i>Pogamia pinnata</i> L.	Papilionaceae	Bark	Karanj/kadubadam
20	<i>Terminalia arjuna</i> (Roxb.)Wight&Arn	Combretaceae	Bark	Arjuna
21	<i>Lawsonia inermis</i> L.	Lathraceae	leaves	Jangalimehandi
22	<i>Punica granatum</i> L.	Punicaceae	Fruit bark	Anar
23	<i>Coccinia grandis</i> (L.)Voigt	Cucurbitaceae	leaves	Tendule
24	<i>Lagenaria siceraria</i> (Molina) Standl.	Cucurbitaceae	Seed	Bhopala
25	<i>Trianthema portulacastrum</i> L.	Aizoaceae	Whole plant	Pandaravasu/ Khapkhundi
26	<i>Cuminum cyminum</i> L.	Apiaceae	Fruit	Jeera
27	<i>Spharantes indicus</i> L.	Asteraceae	Whole plant	Gorakhmundi
28	<i>Tagetes erecta</i> L.	Asteraceae	Flower	Zendu
29	<i>Tridax procumbens</i> L.	Asteraceae	leaves	Kambermodi
30	<i>Vernonia cinerea</i> L.	Asteraceae	Whole plant	Sahadevi
31	<i>Chrysanthemum coronarium</i> L.	Asteraceae	Leaves	Sevanti
32	<i>Thevetia peruviana</i> L.	Apocynaceae	Root	Kaner
33	<i>Gymnemasylvestris</i> R.Br.	Asclepiadaceae	Leaves	Gudmar
34	<i>Solanum surattense</i> Burm.f	Solanaceae	Root	Doskfodi
35	<i>Hyptis suaveolens</i> L.Poit.	Lamiaceae	Leaves	Road tulsi
36	<i>Kickxia ramosissima</i> (Wall.) Janchen	Plantaginaceae	Whole plant	Nikay bhashma
37	<i>Tribulus terrestris</i> L.	Zygophyllaceae	Fruit	Gokharu
38	<i>Marcotylom uniflorum</i> (Lam.) Verdc.	Fabaceae	Seed	Kulthi/Kultha/ Holga
39	<i>Melia azedarach</i> L.	Meliaceae	Bark	Bakan

Table 1: Continued...

Sr. No.	Plant name	Family	Plant part Used	Local name
40	<i>Colocasia esculenta</i> (L.) Schott	Amaranthaceae	Rhizome juice	Jangalichamkura
41	<i>Euphorbia hirta</i> L.	Euphorbiaceae	Leaf	Lahandudhi
42	<i>Phyllanthu samarus</i> L.	Euphorbiaceae	Whole plant	Bhueiawala
43	<i>Ricinus communis</i> L.	Euphorbiaceae	Root	Erandi
44	<i>Gloriosa superba</i> L.	Colchicaceae	Tuberous Root	Kallavi
45	<i>Tectona grandis</i> L.f	Lamiaceae	Seed	Sag
46	<i>Urginea indica</i> (Roxb.)Kunth.	Liliaceae	Bulb	Janglikanda

Contain some bioactive compounds; these bioactive compounds have good and helpful property to cure a kidney stone. Therefore, further chemical analytical work of such plant species will definitely helpful to design particular drugs. Now a day some medicinal plants in the region are vanishing due to over exploitation and because of anthropological activities. These plants are needs to be conserved.

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- Jain SK. Dictionary of ethnoveterinary plants of India, *Deep publications*, New Delhi, India, 1999.
- Kirtikar KR and Basu BD. Indian Medicinal Plants, 1933, vol.1-4, Publisher L.M. Basu, Allahabad.
- Sharma PP and Singh NP. Ethnobotany of Dadra Nagar Haveli and Daman, (Union territories) Botanical survey of India, Kolkata, India, 2001.
- Patil JU and Biradar SD. Folkloric medicinal plants of Hingoli District, Maharashtra, *Indian Journal of National Products and Resources*, 2011, 2(1):97-101
- Chavan Prachi N, Kumar D, Kasana MS. Medicinal plants of Muzaffarnagar district used in treatment of urinary tract and Kidney Stone; *Indian J. of Traditional Knowledge*, 2009, 8:(2); 191-195
- Ghatal pandit SR, Johnson N and Rajasab AH. Medicinal plant of North Karnataka used in treatment of kidney stone urinary tract infection; *The Socioscan*; 2010, 2:(3&4):23-24.
- Aggarwal A, Tondon S, Singla SK, Tondon C. Reduction of oxalate - induced renal tubular epithelial (NRK -52 E) cell injury and inhibition of Calcium oxalate crystallization in vitro by aqueous extract of *Achyranthesaspera*, *International Journal of Green Pharmacy*, 2010, 4:(3); 159-164.

References

- Tiwari Anand, Vivek Soni, Vikas Londhe, Ashish Bhandarkar, Deepti Bandawane and Sonali Nipate. An Overview on potent indigenous herbs for Urinary Tract infirmity;Urolithiasis, *Asian Journal of Pharmaceutical and Clinical Research*, 2012, 5 (1): 8-12.
- Jain SK. Methods and approaches in ethanobotany, society of ethanobotanists, Lukhnow, India, 1989.