



INDIAN TRADITIONAL KNOWLEDGE FOR THE TREATMENT OF KIDNEY STONE: A REVIEW

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ABSTRACT:

This review describes 58 plant species used by tribal and local people of different parts of India for the treatment of kidney stone. Present review provides traditional ethnomedicinal knowledge to research communities as well as to pharmaceutical industries.

Key words: - Kidney stone, traditional knowledge, India.

INTRODUCTION:

Herbal medicine used since long time in our country to cure various types of diseases and ailments. This practice is continuously working by tribal and local people of the nation. Various types of therapies are used by the local healers and medicine men to cure ailments. From region to region different plant species are used for the treatment of diseases depending on the availability of that plant species.

MATERIAL AND METHODS:-

The investigation on wetland plants of the corridor was carried out in all three different seasons; winter (October to January), summer (February to May) and monsoon (June to September) from October 2014 to September 2016. Observed plants were photographed and plant specimens were identified as per Ugemuge (1986), Kodarkar, (1992), Cook(1996) and Fasset (2000).The aquatic plants were categorized on the basis of their existence in lake as submerged, floating, shore plants and peripheral plants. Conservation needs of the aquatic plants were assessed on the basis of IUCN red list status.

RESULT AND DISCUSSION

In our country vaidus, hakims, medicine men, women, herbal medicine practitioners used plants for the treatment of urinary related problems which include kidney stones. In present review, attempt has made to find out plants used for the removal of kidney stone. During the literature survey, total 58 plant species found to be used by different communities and from different localities of India to remove kidney stone. The plant species those are used for the treatment of kidney stone are enumerated as follows with their citation as follows.

1. *Abrus precatorius* L. (Family *Leguminosae*) : Leaf juice taken early morning for fifteen days (three to four tablespoons) to cure kidney stones by tribals of Nizamabad district of Andhra Pradesh⁽¹⁾.
2. *Acanthus ilicifolius* L. (Family *Acanthaceae*) : People of Pichavaram mangroves of East coast, Tamil Nadu, boiled whole plant in water and given to half glass to patient in kidney stone until stone disappear⁽²⁾.
3. *Achyranthes aspera* L. (Family *Amaranthaceae*) : Tribes of Bijararh of West Nimar district of Madhya Pradesh used root juice to cure stone trouble ⁽³⁾.
4. *Aerva lanata* (L.) Juss. (Family *Amaranthaceae*) : The bark of root mixed with palm sugar and paste is prepared and consumed along with warm water for 30 days to cure bladder stone and kidney stone by local people of sacred grove of Panruti Taluk, Cuddalore district of Tamil Nadu⁽⁴⁾. Whole plant extract with *Cuminum cyminum* fruits and sugar given for fifteen days and curry of leaves used for the treatment of kidney stone by local people of Nizamabad district of Andhra Pradesh ⁽¹⁾.
5. *Ageratum conyzoides* (L.) L. (Family *Compositae*) : This plant species is reported for stone treatment from Samba district of Jammu and Kashmir state ⁽⁵⁾.
6. *Altermanthera pungens* Kunth (Family *Amaranthaceae*) : For the treatment of Kidney stone people of Yercaud Hills of Eastern Ghats Tamil Nadu taken leaf juice internally ⁽⁶⁾.
7. *Argyreia nervosa* (Burm. f.) Bojer (Family *Convolvulaceae*) : Infusion of leaves taken internally for the treatment of kidney stone by the tribals of Balaghat district of Madhya Pradesh ⁽⁷⁾.
8. *Asphodelus tenuifolius* Cav. (Family *Xanthorrhoeaceae*) : Leaf decoction is given in the treatment of Kidney stone by people of Shekhawati region of Rajasthan ⁽⁸⁾.
9. *Begonia malabarica* Lam. (Family *Begoniaceae*) : Leaf infusion taken to treat kidney stone by paliyars aboriginals in Virudhunagar district of Tamil Nadu ⁽⁹⁾.
10. *Bergenia ciliata* (Haw.) Sternb. (Family *Saxifragaceae*) : Root decoction is used in kidney stone problems by *Jaunsari* tribe of Garhwal Himalaya, Uttaranchal ⁽¹⁰⁾. Root decoction reported by Joshi and Tyagi ⁽¹¹⁾ from Himalayan region for the treatment of Kidney stone.
11. *Bergenia pacumbis* (Buch.-Ham. ex D.Don) C.Y.Wu & J.T.Pan (Family *Saxifragaceae*) : Tea made from plant and given to patients to cure kidney stone for three times daily by people of Mornaula reserve forest in West Himalaya ⁽¹²⁾.
12. *Beta vulgaris* L. (Family *Amaranthaceae*) : Two glass of rhizome juice for seven days taken by local people of Nizamabad district of Andhra Pradesh ⁽¹⁾.
13. *Bryophyllum pinnatum* (Lam.) Oken (Family *Crassulaceae*): To treat kidney stone, people of Mallikarjun Hills of Malwa from Sangali district of Maharashtra used leaf extract and sugar cane extract for seven days ⁽¹³⁾. For the treatment of urinary bladder stones leaf extract taken by *Khamptis* of Arunachal Pradesh ⁽¹⁴⁾. Leaf decoction used by people of coastal districts of Odisha to cure stone and urinary bladder problems ⁽¹⁵⁾. People of Mahendragarh district of Haryana also used leaf for the same ⁽¹⁶⁾. Leaves are eaten by tribals of Gondia district of Maharashtra state to cure urine stone ⁽⁵⁶⁾.
14. *Carica papaya* L. (Family *Caricaceae*) : Roots are used in treatment of kidney stone by Gavanal village of Belgaum district ⁽¹⁷⁾. Root powder used by tribal people of

- Darekasa Hill range of Gondia district of Maharashtra ⁽⁵⁶⁾.
15. *Celosia argentea* L. (Family *Amaranthaceae*) : Shaikh *et al* ⁽¹⁸⁾ reported root extract to cure kidney stone used by villagers in Nanded district of Maharashtra. Five gram seed powder with milk used to cure kidney stone by people of Mallikarjun Hills of Malwa from Sangali district of Maharashtra ⁽¹³⁾. Seeds are used by people of Peth and Trimbakeshwar district of Nashik, Maharashtra ⁽¹⁹⁾. Seed are used to dissolve urinary stones by people of Mokhada of Thane district ⁽²⁰⁾.
 16. *Cheilocostus speciosus* (J.Koenig) C.D.Specht (Family *Costaceae*) : Rhizome decoction given in urinary disorder especially in stone by tribes of Arunachal Pradesh ⁽²¹⁾.
 17. *Chenopodium album* L. (Family *Amaranthaceae*) : Juice of plant mixed with sugar and used to cure kidney stone by the people of Mahendragarh district of Haryana ⁽¹⁶⁾.
 18. *Citrus limon* (L.) Osbeck (Family *Rutaceae*) : Fruit juice is taken to cure kidney stone by *Lotha- Naga* tribe in Wokha district of Nagaland ⁽²²⁾.
 19. *Citrus medica* L. (Family *Rutaceae*) : Fruits are used to treat kidney stones by the people of Sanchor and Mount Abu regions in Sirohi district of Rajasthan ⁽²³⁾.
 20. *Clausena heptaphylla* (Roxb.) Wight & Arn. (Family *Rutaceae*) : Fruit juice is used for the treatment of Kidney problem and kidney stone by *Hmar* tribe of Cachar district, Assam ⁽²⁴⁾.
 21. *Corbichonia decumbens* (Forssk.) Exell (Family *Lophiocarpaceae*) : In the treatment of kidney stone, crushed leaves taken orally by people of Shekhawati region of Rajasthan ⁽⁸⁾.
 22. *Curculigo orchioides* Gaertn. (Family *Hypoxidaceae*) : Fresh rhizome decoction taken with honey for 21 to 30 days to cure kidney stone by *Kandhas* of Kandhamal district of Orisa ⁽²⁵⁾.
 23. *Curcuma longa* L. (Family *Zingiberaceae*) : Rhizome is used to remove gall stone by tribals of Udayagiri forest in Eastern Ghat, Odisha ⁽²⁶⁾.
 24. *Cynodon dactylon* (L.) Pers. (Family *Poaceae*) : Whole plant extract about 20 ml taken for ten days to cure kidney stone by folklore of Nizamabad district of Andhra Pradesh ⁽¹⁾.
 25. *Cyperus rotundus* L. (Family *Cyperaceae*) : Rhizome and root nodule powder taken to cure stone problems by tribals of Sanchor and Mount Abu regions in Sirohi district of Rajasthan ⁽²³⁾.
 26. *Diospyros vera* (Lour.) A. Chev. (Family *Ebenaceae*) : Fruits reported from Kalrayan and Shervarayan Hills, Eastern Ghats of Tamil Nadu for the treatment of Kidney stones ⁽²⁷⁾.
 27. *Duranta erecta* L. (Family *Verbenaceae*) &
 28. *Piper nigrum* L. (Family *Piperaceae*) : Leaves of *Duranta erecta* L. and fruits of *Piper nigrum* L. taken orally to remove kidney stones by people of Dibru- Saik howa Biosphere reserve, Assam ⁽²⁸⁾.
 29. *Elytraria nodosa* E.Hossain (Family *Acanthaceae*) : leaf powder taken with water to remove kidney stone by ethnic groups of Rajasthan ⁽²⁹⁾.
 30. *Ensete superbum* (Roxb.) Cheesman (Family *Musaceae*) : Fresh tender peduncle used to excessive urination and kidney stone by tribal people of Satpuda mountain ⁽³⁰⁾.
 31. *Ficus racemosa* L. (Family *Moraceae*) : latex collected in *Patasa* (it is an item made from sugar) early in morning and then eaten *patasa* internally to treat kidney stone by people of Arawali Hills in North Gujrat ⁽³¹⁾.

32. *Holarrhena pubescens* Wall. ex G. Don (Family *Apocynaceae*) : Seed and bark used for the treatment of kidney stone by tribal communities of Saputara and Purna Forests of Dangs district of Gujrat ⁽³²⁾.
33. *Gossypium herbaceum* L. (Family *Malvaceae*) : Fruits roasted in burning ash and extract of fruit taken to treat kidney stone by people of Nizamabad district of Andhra Pradesh ⁽¹⁾.
34. *Homonoia riparia* Lour. (Family *Euphorbiaceae*) : Root used in the treatment of bladder stone by people of Kumar parvatha Kukke Subramanya, Manglore, Karnataka ⁽³³⁾.
35. *Indigofera tinctoria* L. (Family *Leguminosae*) : Root decoction is administered by people of Narsipatnam division of Visakhapatnam district of Andhra Pradesh ⁽³⁴⁾.
36. *Lawsonia inermis* L. (Family *Lythraceae*) : Boiled root bark is drunk to cure muscular blockage and urinary stones by villagers of Malligainatham village of Kandarakottai Taluk of Pudukottai district, Tamil Nadu ⁽³⁵⁾. Sahu *et al* ⁽¹⁵⁾ reported from coastal districts of Odisha that stem boiled and kept overnight in a clay pot and taken early morning to treat stone.
37. *Macrotyloma uniflorum* (Lam.) Verdc. (Family *Leguminosae*) : Seeds are used to cure kidney stone by people of nearby inhabitants of Mornaula reserve forest in West Himalaya ⁽¹²⁾. Cooked and juice taken for kidney stone by *Limboo* tribe in South West of Khangchendzonga biosphere reserve of Sikkim ⁽³⁶⁾.
38. *Momordica dioica* Roxb. ex Willd. (Family *Cucurbitaceae*) : Seeds are used to remove kidney stone by tribals of Dhar district of Madhya Pradesh ⁽³⁷⁾.
39. *Musa × paradisiaca* L. (Family *Musaceae*) : Bark juice used to cure stone disorder by *Irulas* tribe of Thirumurthi Hill of Western Ghats of Tamil Nadu ⁽³⁸⁾. Juice from central trunk is orally taken to dissolve kidney stone by villagers of southern districts of Tamil Nadu ⁽³⁹⁾. Cooked flowers are used by villagers of Malligaiatham village of Kandarakottai Taluk, Pudukottai district of Tamil Nadu ⁽³⁵⁾. Skin bark juice is used by malayali tribe of Kalrayan Hill of Tamil Nadu to treat stone bladder ⁽⁴⁰⁾. *Irula* tribe of Thirumutthi Hill of Western Ghat Tamil Nadu also used this plant for the treatment of kidney stone ⁽⁴¹⁾.
40. *Nanorrhinum ramosissimum* (Wall.) Betsche (Family *Plantaginaceae*) : Plant paste is given to cure kidney stone by people of Sekhawati region of Rajasthan ⁽⁸⁾.
41. *Oxalis corniculata* L. (Family *Oxalidaceae*) : Root decoction used by local people of Macchegaun, Nepal to remove stone from urinary bladder ⁽⁴²⁾.
42. *Pedaliium murex* L. (Family *Pedaliaceae*) : Whole plant and seeds are used to cure kidney stone by people of Nizamabad district of Andhra Pradesh ⁽¹⁾.
43. *Phyla nodiflora* (L.) Greene (Family *Verbenaceae*) : whole plant paste is applied on stomach to cure kidney stone problem by *Bhil* tribe of Bibdod of Madhya Pradesh ⁽⁴³⁾.
44. *Raphanus raphanistrum* subsp. *sativus* (L.) Domin (Family *Brassicaceae*) : Roots and leaves juice given to treatment of kidney stone by inhabitants of Mornaula reserve forest in West Himalaya ⁽¹²⁾.
45. *Rotheca serrata* (L.) Steane & Mabb. (Family *Lamiaceae*) : Root decoction used to cure kidney stone with *Datura metel* and *Allium sativum* by tribals of Balaghat district of Madhya Pradesh ⁽⁷⁾.
46. *Saraca asoca* (Roxb.) Willd. (Family *Leguminosae*) : Seed paste with water taken to treat stone diseases by people of coastal districts of Odisha ⁽¹⁵⁾. Seed powder and honey is taken orally to

dissolves renal calculi by local people of Gulbarga district of Karnataka ⁽⁴⁴⁾.

47. *Smilax ferox* Wall. ex Kunth (Family *Smilacaceae*) : To removal of gall stones, root decoction taken with *Pteridium aquilinum* (rhizome) taken daily three times by *Khasi* traditional healers and village folks in Meghalaya ⁽⁴⁵⁾.
48. *Solanum virginianum* L. (Family *Solanaceae*) : Root powder with curd given for seven days by Folklore of Nizamabad district of Andhra Pradesh ⁽¹⁾.
49. *Solanum surattense* Burm. f. (Family *Solanaceae*) : Fruit decoction used by people of Sheshachala Hill range of Kadapa district of Andhra Pradesh to removes stones in urinary bladder ⁽⁴⁶⁾.
50. *Sonchus oleraceus* (L.) L. (Family *Compositae*) : Bark used for the treatment of kidney stone by the Mishing community of North East India ⁽⁴⁷⁾.
51. *Syzygium cumini* (L.) Skeels (Family *Myrtaceae*) : Fruits directly eaten to cure kidney stones by people of Nizamabad district of Andhra Pradesh ⁽¹⁾.
52. *Tectona grandis* L.f. (Family *Lamiaceae*) : Seed powder given with cow's milk and ghee for kidney stone by tribals of Katei baba sacred grove of Akole taluka, Ahmednagar district of Maharashtra ⁽⁴⁸⁾.
53. *Thottea siliquosa* (Lam.) Ding Hou (Family *Aristolochiaceae*) : Seed infusion used to treat kidney stone by Malamalasar tribe of Parambikulam wildlife sanctuary, Kerala ⁽⁴⁹⁾.
54. *Tinospora sinensis* (Lour.) Merr. (Family *Menispermaceae*) : Stem extract used by tribals of Bijargarh of West Nimar district of Madhya Pradesh in the treatment of Stone trouble ⁽³⁾.
55. *Tribulus terrestris* L. (Family *Zygophyllaceae*) : Roots are used in the treatment of urinary stones by people of Ivanur Panchayat in

Cuddalore district of Tamil Nadu ⁽⁵⁰⁾. Plant extract is used by tribals of Bjararh of West Nimar district of Madhya Pradesh to cure stone troubles ⁽³⁾. Plant extract also used to treat kidney stone by Valaiyans of Alagarkoil Hills of Madurai district of Tamil Nadu ⁽⁵¹⁾. Plant is used for the treatment of Urinary trouble and kidney stone by Sariska and Siliserh regions from Alwar district of Rajasthan ⁽⁵²⁾. People of Nizamabad district of Andhra Pradesh taken powder with boiled milk daily to cure kidney stones. ⁽¹⁾. People of Yercaud Hills in the eastern Ghats of Tamil Nadu also used plant extract for the same ⁽⁵³⁾. Whole plant is used to cure stone problems by tribals of Sanchor and Mount Abu regions in Sirohi district of Rajasthan ⁽²³⁾. Taindol village of Jhansi district region of Bundelkhand Uttar Pradesh used to cure kidney stone ⁽⁵⁴⁾.

56. *Tridax procumbens* (L.) L. (Family *Compositae*) : 10 gm fresh leaves crushed and extract taken for three days to cure kidney stones by people of Bidar district of Karnataka ⁽⁵⁵⁾. Leaves are applied to cure kidney stone by Sariska and Siliserh regions from Alwar district of Rajasthan ⁽⁵²⁾. Leaf extract taken orally to dissolves kidney stones by local people of Gulbarga district of Karnataka ⁽⁴⁴⁾.
57. *Woodfordia fruticosa* (L.) Kurz (Family *Lythraceae*) : Fresh or dried flower extract recommended to remove stone ⁽¹³⁾.
58. *Wrightia tinctoria* R.Br. (Family *Apocynaceae*) : Bark and curd given to dissolve stones in gall bladder by Mokhada people of Thane district ⁽²⁰⁾.

CONCLUSION:

Present review indicates that *Tribulus terrestris* L. is dominantly used for the treatment of kidney followed by *Musa × paradisiaca* L., *Bryophyllum pinnatum* (Lam.)

Oken, *Celosia argentea* L. and *Tridax procumbens* (L.) L. The present review provides traditional knowledge to research communities those are involved in urinary related diseases diagnosis and treatment and people of the country those are concerned with herbal medicine.

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Abrus precatorius L.



Achyranthes aspera L.



Celosia argentea L.



Musa × paradisiaca L.