



Special Issue of First International Conference on Advancements in Research and Development Ethnobotanical Survey on Antiuro lithiatic Activity of Some Medicinal Plants

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Abstract

Now a day's 80% of world population depends on herbal drugs. Apart from the synthetic drugs, Herbs has a medicinal properties as they have active constituents which are found to be more beneficial with less or no side effects. On the other hand overuse of synthetic drugs has create an interest to return to natural remedies. Prevalence of kidney stones or calculi is most common and painful disorder in population these days. Urinary stones are found in all parts of the urinary tract, the kidney, the Ureter and urinary bladder. Different causes of renal calculi are deposits of minerals, infections, hereditary factors. This may result into uremia, pyelonephritis, kidney failure etc. In the present study has been made to prominence and potential of herbal option for urinary stone or renal stone.

Keywords:- Antiuro lithiasis, urinary stone, herbal drugs, renal calculi

1. Introduction

Since, evolution, humans race is constantly being challenged by many dreadful diseases and it is a difficult task to combat each one of them in the present scenario. This situation has brought about an alarming situations with sporadic increase in the incidences of life style diseases such as diabetes mellitus, heart diseases, arthritis, cancer and urolithiasis, all over the world and India is not an exception. Amongst others a large proportion of population is affected with urolithiasis, which is one among the oldest and widely reported diseases to mankind. Urolithiasis is a recurrence disease with a reversion rate of 50% in 5-10 year and 75% in 20 year. It is estimated that 12% of world population experiences renal stone disease with a

recurrence rate 70-80% in male and 47-60% in female (Orson, 2006 [6], Soundararajan et.al.,2006)[12]. The life time risk of developing urolithiasis is about 10-15% in the western world, but can be as high as 20-25% in the Middle East(Coe et al.,2005)[1]

The overuse of synthetic drugs which results in higher incidence of adverse effects, hence humans has created an interest in traditional medicines. Herbs and herbal drugs has motivated people to return to nature for safe remedies [3]. WHO (World Health Organization) estimated that 80% of people worldwide rely on herbal medicine for some aspects of their primary health care needs.[3] From the ethnobotanical survey number of plants used for anti-urolithiatic activities. Following are the list of plant showing anti-urolithiatic activity.

Table 1: List of plant showing anti-urolithiatic activity

S.No	Botanical names	Common name	Part use	Used
1.	Alhagi mannifera (Leguminaceae)	Camels thorn	Roots	For kidney pebbles and Sands
2.	Armoracia lopathifolia (Brassicaceae)	Horse radish	Seeds	Diuretic, Kidney Stones
3.	Aerva javanica (Amaranthaceae)	No	Seed heads	Diuretic, Purgetive, Demulcent
4.	Aerva lanata (Amaranthaceae)	Gorkhabundi	Leaves	Cough, Sore throat, Diabetes, Lithiasis
5.	Ammannia baccifera (Lythraceae)	Dadamari	Root	Ringworm, Parasitic skin affection, Anti-typhoid
6.	Arctostaphylos uraursi (Asteraceae)	Bearberry	Fruits	Diuretic, Diaphoretic, Gout, Skin affection
7.	Ascyrum hypericoides (Asclepidaceae)	Ascus	Root & Leaves	Emetic and Catharatic
8.	Asparagus racemosus (Liliaceae)	Satavar	Root	Herb tonic, Diuretic, Galactagogue
9.	Abutilon indicum (L.) (Malvaceae)	Indian Mallow	Leaves	Juice taken twice daily for two weeks
10.	Aegle marmelose (L.) (Rutaceae)	Wood apple, Bael	Leaves and fruit	1 spoon of Fruit pulp powder is taken orally with coconut milk for 14 days to dissolve kidney stones
11.	Amaranthus spinosus (L.) (Amaranthaceae)	Spiny amaranth	Root or plant	1 cup of whole plant is taken
12.	Amaranthus viridis (L.) (Amaranthaceae)	Slender Amaranth, Green Amaranth.	All parts	Given in kidney stone
13.	Argemone maxicana (L.) (Papaveracea)	Slender Amaranth	Root	Root powder is given for burning urination
14.	Ageratum conyzoides (L.) (Asteraceae)	Goat Weed	Leaves	Leaf extract is given twice a day
15.	Amaranthus caudatus (L.) (Amaranthaceae)	Love-lies-bleeding	Leaves	Extract is given in kidney stone
16.	Asphodelus tenuifolius (Cav.) (Liliaceae)	Weed of fields	Leaves	Decoction of leaves
17.	Apium graveolens (Apiaceae)	Lavender	Flowers	Decrease cholesterol level, Condiment.
18.	Achyranthes aspera (L.) (Amaranthaceae)	Khaff-flower	Roots	Urolithiasis, urinary tract
19.	Amni visnaga (L.) (Apiaceae)	Khella	Whole plant	Urolithiasis, urinary tract

S.No	Botanical names	Common name	Part use	Used
20.	Abelmoschus moschatus [7] (Malvaceae)	Annual hibiscus	seeds	Improves glomerular filtration and prevents elevated levels of serum creatinine, uric acid, and blood urea nitrogen.
21.	Barbarea vulgaris (Brassicaceae)	Rocket	Roots & Leaves	For kidney stone
22.	Berginia ligulata (Saxifragaceae)	Pasanabheda	Rhizomes	Astringent. Diuretic, Lithontriptic
23.	Beta vulgaris (L.) (Amaranthaceae)	Garden beet	Roots	Urolithiasis, urinary tract
24.	Bridolia montana (Euphobiaceae)	Chikitsa silianam	Bark	Bark Astringent, Anthelminetic
25.	Bombex ceiba (L.) (Bombacaceae)	Cotton tree	Stem and bark	Given for urinary problems
26.	Borhaavia diffusa (Nyctagenaceae)	Hogweed, Punarnava	Root	Root decoction is given daily for one month in kidney stone
27.	Blumea balsamifera (Asteraceae)	Sambong	Flowering plant	Diuretic, common cold, urolithiasis expectorant, anti-diarrhel
28.	Berberis vulgaris (L.) (Berberidaceae)	Barberry	Roots bark	Urolithiasis, urinary tract
29.	Bryophyllum pinnatum [11](Crassulaceae)	Miracle leaf	leaves	Reduces urinary oxalate
30.	Capsella bursa-pastori (Brassicaceae)	Shepherd's-purse	Entire plant	Diuretic, For bladder & kidney spasm
31.	Cucumis sativus (Cucurbitaceae)	Cucu	Leaves	Kidney stones, Emollient
32.	Caesalpinia huga (Caesalpinioceae)	Nicker nut	Root	Root Diuretic, Lithontriptic
33.	Capsicum annum L. (Solanaceae)	Chilly	Fruit	Anti urolithiatic
34.	Citrus japonica (Rutaceae)	Celery	Whole plant	Antispasmodic, Eczema
35.	Celosia argental (Amararanthacea)	Plumed cockscomb	Leaves or Stem	Diarrhoea, Eye troubles, Sore mouth
36.	Chelidonium majus (Papaveraceae)	Chel	Leaves	Diuretic, Antispasmodic, bitter
37.	Cassia fistula (L.) (Caesalpinioideae)	Golden shower tree	Fruit	Fruit powder is given with water for 3-4 month to expel the kidney stone
38.	Ceropegia bulbos (L.) (Asclepidaceae)	Caudiciform	Tubers	Decoction of tubers is used to remove urinary bladder stone
39.	Chenopodium album (L.) (Chenopodiaceae)	Lamb's Quarters	Leaves	Cokked leaves is given in urinary trouble

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40.	<i>Citrus medica</i> L. (Rutaceae)	Idlimbu	Fruit	Anti urolithiatic
41.	<i>Citrus aurantium</i> L. (Rutaceae)	Orange	Fruit rind, complete fruit	Anti urolithiatic
42.	<i>Coculus hirsutus</i> (L.) (Menispermaceae)	Cocculus Indicus	Leaves	Leaf dried powder is given during burning urination
43.	<i>Corbichonia decumdens</i> (Forssk.) (Molluginaceae)	Forssk	Leaves	Crushed leaves given orally
44.	<i>Costus speciosus</i> (koen.) (Costaceae)	Keukand	Tubers	Decoction of tubers orally for stones
45.	<i>Cynodon dactylon</i> (L.) (Poaceae)	Dog's tooth grass	Roots	Root decoction is given in case of urolithiasis
46.	<i>Chimaphila numbellata</i> (Cruciferae)	Prince's pine	Flower	Diuretic, Expectorant, Stimulant
47.	<i>Centella asiatica</i> (L.) (Umbelliferae)	Gotu kola	Whole plant	Urolithiasis, urinary tract
48.	<i>Curcuma longa</i> (Zingiberaceae)	Haldi	Rhizome	Diuretic, Choleric, Hepatoprotective
49.	<i>Convolvulus aervensis</i> [9] (Convolvulaceae)	European bindweed	Leaves and flowers	Affects crystal growth
50.	<i>Desmodium styracifolium</i> (Papilionaceae)	Osbeck	Rhizome	Roots Emmenagogue, Stomachic
51.	<i>Didymocarpus pedicellata</i>	Stone Flower	Leaves	Lithonriptic
52.	<i>Daucas carota</i> (L.) (Apiaceae)	Wild carrot	Rhizome	One glass juice is given for night to remove kidney stone
53.	<i>Digera muricata</i> (L.) (Amaranthaceae)	Digera Muricata	Leaves	Once in a day for urinary complains
54.	<i>Diospyros melaoxylon</i> (Rox) (Ebenaceae)	Digera Muricata	Fruit and bark	Fruit is given in urinary disorders
55.	<i>Dolichos biflorus</i> (Leguminaceae)	Horse gram	Seeds	Diuretic, Astringent, Tonic
56.	<i>Dichrostachys cinerea</i> (L.) (Mimosaceae)	Bell mimosa	Roots	Urolithiasis, urinary tract
57.	<i>Elettaria cardamomum</i> (Zingiberaceae)	Cardamom	Seeds	Diuretic, Carmintive, Aromatic stimulant
58.	<i>Equisetum arvense</i> (Equisetaceae)	Horsetail	Seeds	Diuretic, Dropsy, Graval, Renal affection
59.	<i>Eleusine coracana</i> (Gaertn.) (Poaceae)	Finger millet	Grains	Urolithiasis, urinary tract
60.	<i>Fogonia bruguieri</i> (Umbelliferae)	Fagonia	Fruit	Diuretic, Mildly carminative

S.No	Botanical names	Common name	Part use	Used
61.	<i>Ficus carica</i> (Moraceae)	Fig	Fruit, latex	Destroy urinary & gall Stone
62.	<i>Garcinia pictoria</i> (Guttiferae)	Tamal. Pers.	Leaves	Dropsical affection
63.	<i>Gynocardia odorata</i> (Flacourtiaceae)	Coffee Plum	Fruit	Fish poison, Insecticidal, Skin ailments
64.	<i>Gomphrena celosioide</i> (Amaranthaceae)	Gomphrena Weed	Whole plant	Juice is given twice a day for ten days
65.	<i>Grewia flavescens</i> (Tiliaceae)	Sandpaper Raisin	Root	Decoction of root powder to stop bleeding in urine
66.	<i>Glycine max</i> L. (Fabaceae)	Soybean	Seed	Anti urolithiatic
67.	<i>Homonoia riparia</i> (Lour.) (Euphorbiaceae)	Willow-Leaved Water Croton	Root	Urolithiasis, urinary tract
68.	<i>Hygrophila spinosa</i> (Acanthaceae)	Gokulakanta	Leaves	Strongly Diuretic
69.	<i>Herniaria hirsute</i> (L.) (Illecebraceae)	Hairy rupturewort	Whole plant	Urolithiasis, urinary tract
70.	<i>Holarrhena antidysenteria</i> [5] (Apocynaceae)	Kuruchi	seeds	Reduces crystal size transforms COM to COD
71.	<i>Ichnocarpus frutescens</i> (L.) (Apocynaceae)	Black creeper	Root	Urolithiasis, urinary tract
72.	<i>Ipomea eriocarpa</i> [2] (Convolvulaceae)	Malghanti	leaves	Inhibits urinary stones
73.	<i>Lavendula officinalis</i> (Lamiaceae)	Ginger	Rhizomes	Stop bleeding, Ant rheumatism
74.	<i>Lantana camara</i> (L.) (Verbinaceae)	Big-sage	Leaves	Urolithiasis, urinary tract
75.	<i>Lawsonia inermis</i> (L.) (Lythraceae)	Henna	Leaves	Urolithiasis, urinary tract
76.	<i>Mentha piperita</i> (Lamiaceae)	Peppermint	Entire herb	Treatment in stone disease
77.	<i>Mimosa pudica</i> (Mimosaceae)	Touch-me-not	Leaves	Gravel, Urinary complaints
78.	<i>Musa paradensis</i> (L.) (Musaceae)	Banana	Ripe kernel juice	Urolithiasis, urinary tract
79.	<i>Ocimum</i> (Labiatae)	Holy Basil, tulsi	Leaves	Stomachic, antipyretic, alexipharmac,
80.	<i>Onosma bracteatum</i> (Boraginaceae)	Sedge	Leaves	Tonic, Demulcent, Diuretic, Spasmolytic
81.	<i>Olea europeae</i> (Oleaceae)	Olive	Oil	Treatment of kidney stone
82.	<i>Origanum vulgare</i> [4] Lamiaceae	Ramtulsi	Aerial part of plant	Reduced crystalluria, serum urea and creatinine levels.

S.No	Botanical names	Common name	Part use	Used
83.	<i>Pavonia odorata</i> (Malvaceae)	Fragrant Swamp Mallow	Rhizomes, Leaves	Antipyretic, Stomachic, Refrigerent, dysentery
84.	<i>Pimpinella anisum</i> (Umbelliferae)	Anise	Fruit	Antispasmodic, Diuretic, Treatment of kidney stones
85.	<i>Pedaliium murea</i> (Pedaliaceae)	Burra Gokhru	Fruits	Decoction of fruit is used for urinary complains
86.	<i>Phyllanthus niruri</i> (L.) (Euphorbiaceae)	bhumyamalaki	Whole plant	Urolithiasis, urinary tract
87.	<i>Phyllanthus emblica</i> (L.) (Euphorbiaceae)	Gooseberry or amla	Seed Powder	Given to avoid burning urination
88.	<i>Plantago major</i> (L.) (Plantaginaceae)	Greater plantain	Whole plant	Urolithiasis, urinart tract
89.	<i>Phyllanthus fraternus</i> (Webster.) (Euphorbiaceae)	Gulf leaf-flower	Whole plant	Plant extract is given orally for 3-4 day to dissolve the stones
90.	<i>Psidium guajava</i> L. (Myrtaceae)	Guava	Fruit	Anti urolithiatic
91.	<i>Rosmarinus officinalis</i> (Lamiaceae)	Rosemary	Leaves	Relive menstrual cramps, increase, urine flow, and reduce kidney pain
92.	<i>Rubia cordifolia</i> (Rubiaceae)	Madder or Indian Madder	Leaves, Roots	Antidysentric, Antiseptic, Deobstruent
93.	<i>Rotula aquatica</i> (Lour.) (Boraginaceae)	Machim	Root	Urolithiasis, urinary tract
94.	<i>Solanum surattence</i> (Solanaceae)	Yellow-Berried Nightshade	Roots	Root decoction is given for seven day
95.	<i>Santalum album</i> (Solanaceae)	White sandal	Oil	For urinary bladder
96.	<i>Solidago virgaurea</i> (Asteraceae)	Woundwort		kidney tonic
97.	<i>Solanum lycopersicum</i> L. (Solanaceae)	Tomato	Fruit	Anti urolithiatic
98.	<i>Tectona grandis</i> (Verbenaceae)	Teak	Wood	Urinary discharge
99.	<i>Theobroma cacao</i> (Malvaceae)	Cocoa	Seed	urinary tracts diseases
100.	<i>Tamarind indica</i> (Fabaceae)	Tamarindus	Fruits	For kidney and gall stone
101.	<i>Tinospora cordifolia</i> (Wild L) (Menispermaceae)	Guduchi	Stem	Crushed stem to expel the stone
102.	<i>Tribulus terrestris</i> (L) (Zygophyllaceae)	Puncture Vine	Leaves	Used in treatment of kidney stone
103.	<i>Tridax procumbens</i> (L.) (Asteraceae)	Coat buttons	Leaves	Leaf paste is given for kidney stone
104	<i>Terminalia chebula</i> [8] Combretaceae	Hirad	seeds	Increase cell viability and cytotoxicity to cells

S.No	Botanical names	Common name	Part use	Used
105.	Tubiflora acaulis (L.F.) (Acanthaceae)	Kuntze	Leaves	Leaf powder with water is given for urinary complains
106.	Urgina maritime (Asparagaceae)	Squill bulb	Bulb leaves	Diuretic
107.	Urtica dioica (Urticaceae)	Stinging nettles	Roots	Diuretic
108.	Vernonia cinerea (Compositae)	Little iron weed	Leaves	Anthelmintic, Diarrhoea
109.	Xanthium strumarium (L.) (Asteraceae)	Woolgarie bur	Flower	Urolithiasis, urinary tract
110.	Zingiber officinale (Zingiberaceae)	Ginger	Rhizomes	Stop bleeding, Ant rheumatism
111.	Zea mays (Poaceae)	Maize	Seeds Oil /Tassel	For bladder & Kidney spasm. Given orally to expel the stone

Result and Discussion:

In view of the above, an attempt has been made to collect information pertaining to the variety of plant species than in some or the other form show potential for use as antiurolithiatic agent. On the basis of ethnobotanical survey a total of 111 plant species are identified with potential to provide chemicals that can be used as antiurolithiatic agent. The problems facing researchers of indigenous drugs and herbal medicines are many. There is huge interest in and support to carry further research for new and useful drugs from higher plants to cure various diseases.

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