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## HERBAL TREATMENT FOR URINARY STONES

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### ABSTRACT

#### Keywords:

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Herbs and herbal drugs have created interest among the people by its clinically proven effects like immunomodulation, adaptogenic and antimutagenic. Also, the overuse of synthetic drugs, which results in higher incidence of adverse drug reactions, has motivated humans to return to nature for safe remedies. The problem of urinary stones or calculi is a very ancient one and many remedies have been employed during the ages these stones are found in all parts of the urinary tract, the kidney, the ureters and the urinary bladder and may vary considerably in size. In the present article, an attempt has been made to emphasis on herbal option for urinary stone.

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**INTRODUCTION:**

Herbs and herbal drugs have created interest among the people by its clinically proven effects like immunomodulation, adaptogenic and antimutagenic. Also, the overuse of synthetic drugs, which results in higher incidence of adverse drug reactions, has motivated humans to return to nature for safe remedies. The origins, according to many, can be sourced to the World Health Organization's Canberre conference in 1976, which promoted the concept of 'Traditional' medicines for the developing countries.<sup>1</sup>

The problem of urinary stones or calculi is a very ancient one and many remedies have been employed during the ages these stones are found in all parts of the urinary tract, the kidney, the ureters and the urinary bladder and may vary considerably in size, Linacre, who had founded the college of physicians, London in 1518 died of urinary stone, a condition he could diagnose but could not true<sup>2</sup>. Diet containing low amounts of inferior quality proteins and high intake of animal proteins might augment the risk of stone formation. The incidence of urolithiasis is very common in Northern India compared to southern state. It is speculated that higher incidence may be due to wheat diets. People living in rocky areas, where the climate is hot and dry, seem to be more to urinary calculi disease<sup>3</sup>.

Physicians usually do not treat kidney stone: they just medicate the pain until the stones pass out their own; and in view of Dake J.K., near-vegetarian diet, heavy on herbs and liquids, can be helpful in the prevention and treatment of kidney stone. So the best way to prevent kidney

stone is to drink plenty of water and take a vegetarian diet high in magnesium<sup>4</sup>. In the present article, an attempt has been made to emphasize on herbal treatment for urinary stone.

**Ancient Medical Literature:** In ancient Rome, Celsus (25 BC-50 AD) described lithotomy in his book 'De Medicine' and the technique was being followed almost without alterations till the end of 16<sup>th</sup> century. Hippocrates (370-460 BC) knew both the renal and vesical types of stones and described the typical ureteric colic and symptoms of bladder calculus.

In the writings of Charaka, Sushruta and Vagbhatta, who lived in 2<sup>nd</sup>, 5<sup>th</sup> and 7<sup>th</sup> century AD, we find real description of the disease and indications for treatment. They recognized four types of stones. Majority of urinary calculi are made up of either calcium phosphate, calcium oxalate, uric acid (urates) or magnesium ammonium phosphate. In India, the common component of urinary calculi is calcium oxalate. A number of vegetable drugs have been used in India and elsewhere and claims of efficient cure of urinary stone have been made. During the 18<sup>th</sup> century in Europe, among the moer rational lithotripts, were the ashes of vine twigs or wood suspended in parsley water.

As early as 23-79 AD Pliny the prescribed infusions of *Paeonia officinalis*, *Mentha spp* and *Cicer arietinum* to dissolve stones in the bladder and kidney, Hippocrates, disbelieved in all the stone solvents but used diuretic for its relief. Avicenna recommended the use of laurel,

cypress oil and ashes of scorpion egg shells, melon seeds etc. for the dissolution of stone. Earlier Hindu writings also contain many prescriptions for dissolving the stone, viz, a mixture of butter, pepper and ginger to which was added drop by drop the urine of a sheep<sup>5</sup>.

**PASHANBHEDA DRUGS:** An attempt has been made during the last decade to study the identical, chemistry, pharmacology and clinical investigations of Pashanbheda plants used for dissolving kidney stones<sup>6</sup>. Pashanbheda is a drug mentioned in the Ayurvedic system of medicine for various ailment but mainly as a diuretic and lithotriptic. It is said to have property of breaking and disintegrating the stones and is widely used drug. However, its identity is yet debatable.

Many diuretic and other plants such as *Alternanthera sessalis* and *Aerva* spp. In South India<sup>7</sup>. *Rotula aquatica* in Mysore<sup>8</sup>, *Ammaunia baceifera* in Kerala<sup>7</sup>, *Bauhinia racemosa*, *Coleus* spp., *Bryophyllum* spp., *Didymocarpus pedicellata*, *Ocimum basilicum* in Bengal<sup>9</sup> and many other have been referred to as Pashanbheda from time to time. Now *Bergenia ligulata* syn. *Saxifraga ligulata* is being widely accepted under this name. Chemical efficiency of *Bergenia ligulata* is dissolving the urinary stones fully justifies the use of various names attributed to it, viz., Pashanbheda, Pashana, Asmaribheda, Ashmabhid, Ashmabhed, Nagabhid, Upalbheda, Parwatbheda and Shilabhed (dissolving or piercing stones or slabs) etc<sup>10</sup>. The very first mention of this drug in Ayurvedic literature is Charak Samhita (210 BC-170 AD) under the name

Pashanbheda. It is recommended for painful micturition, for curing abdominal tumour and for breaking up calculi, Sushruta Samhita (170 AD- 340 BC) mentions the drug under various synonyms in Chikitsa silianam- under the name Pashanbheda for uric acid calculi and Ashnibhid for biliary calculi. In Sushruta Samhita, decoction of Pashanbheda, Ashmantaka, Satavari, Vrihati, Bhalluka, Varuna (Crataeva nurvula), kulatha, kola and kataka seeds have been described for the patients of Vataja Ashmari, while Kusa, Ashmabhid, Patala, Trikantaka, Sirisha, Punarnava and Silajatu and Meduka flower for Pittaja Ashmari have been mentioned<sup>11</sup>. Ashtang Hridaya (341 AD-434 AD) mentions the drugs in chikitsa Sthanam- Upalbheda for extreme pain due to obstructed micturition, Pashanbheda for uric acid calculi and ashmabid for biliary calculi.

In Susruta Samhita "Kurantika" or "Sitivaraka" (*Celosia argental*) is tested in 'Viratarvadigana', which is said to have specific action in urinary diseases, viz., calculi (ashmari), gravels (sarkara), dysuria (*mutra krichhra*) and suppression of urine etc. *Aerva* spp., *Ammania baccifera* and *Nothosarva brachiata* have been reported from South India as lithotriptic plants<sup>12</sup>. *Celosia argental* in Indian system of medicine is considered to be specific for the treatment of ashmari i.e., urinary stone. Aqueous decoction is used for the dissolution and excretion of stones<sup>13</sup>. *Didymocarpus pedicellata*, commonly known as Patharphodi or Shila pushp is useful for stones of kidney and bladder, while *Homonoia riparia*, known as Pashanbheda or kshudra Pashanbheda is

useful in vesical calculi. *Rotula aqualica* syn. *Rhabdia lycioides*, also known as Pashanbhed is useful for stones in bladder. *Bergenia ligulata*, syn. *Saxifraga ligulata*, known as Pashanbheda have strong diuretic and lithotriptic activities but *Kalanchoe pinnala* syn. *Bryophyllum calycinum* known as Pashanbhed in Bengal, and others have no diuretic or lithotriptic activity *Bridelia Montana* also known as Pashanbhed has also not shown any such activities<sup>14</sup>.

*Tribulus terrestris* fruits have also been found useful in diuretic and kidney stones<sup>15</sup>. Effective cure of urinary calculi have been prescribed by practitioners in unani system of medicine<sup>16</sup>, while in Homoeopathic system of medicine, *Berberis vulgaris*, *cantharis spp.*, and *Lycopodium spp.* Are being use

**Clinical And Pharmacological Studies:** In recent years, a number of proprietary composite herbal drugs have also been introduced for dissolving kidney calculi of which mention may be made of Cystone<sup>18</sup> ( Himalaya Drug Co., Bombay ) And Calcury ( Charak Pharmaceuticals, Bombay). These drugs are in common use in India. *Saxifraga ligueata* and *Tribulus terrestris* are the two common plant ingredients of both these herbo-miniral preparation.

Ureteric calculus disappered within 55 days of treatment with 'Cystone' a herbomineral composition<sup>19</sup>. Ghoes et al<sup>20</sup>, have reported successful treatment of urinary tract infection and urinary calculi with Cystone. Cystone binded the mucine of the calculi followed

by later disintegration and flush out of disintegrated partical with the flow of urine. Cystone relaxes the detrusor muscles and promotes diuretics by virtue of its high content of natural mineral salts. Cystone has also been found to be useful in urolithiasis, crystalluria, and urinary tract infection in human beings<sup>21</sup>.

Oral administration of another indigenous herbomineral drug calcury (2 tds) in 40 cases of ureteric calculi, showed passing of disintegrated or intect stones through urine in 25 (62. 85 %) cases<sup>22</sup>. Pharmacologically, *Berginia ligulata* has shown no effect in preventing the stone formation but was found useful in dissolving zinc calculi in the urinary bladder in experimental rats<sup>23</sup>. Alcoholic extract of celosia argental is reported to remove the urinary stones and prevent the stone formation in albino rats<sup>24</sup>. In some parts of India aqueous decoction of *Dolichos biflorus* is regarded as a popular household remedy for dissolving kidney stones<sup>25</sup> and is being used as a folk medicine in various parts of India for urinary calculi. Varuna, Ghokhru and Kulatha were found to be effective in preventing the deposition of the stones in experimental rates. Vataj (oxalate) and pitiaj (urate and cystine) stones did not dissolve in varuva and kulatha. Gokhru decotions dissolve urate and cystine stones to some extent. Kaphaj (phosphetic) stones were dissolving in all the three drugs. Among them kulatha had marked (87%0 dissolving activity and stones become friable<sup>26</sup>. There are many pharmaceutical preparation described in Ayurvedic texts in which kultha is the main ingredient.

Following Plants have been reported to be useful in dissolving Kidney stones by various investigators<sup>17</sup>

PLANT	FAMILY	USES
<i>Aerva javanica</i>	Amaranthaceae	Herb Diuretic, Purgative, Demulcent
<i>Aerva lanata</i>	Amaranthaceae	Cough, Sore throat, Diabetes, Lithiasis
<i>Ammannia baccifera</i>	Lythraceae	Ringworm, Parasitic skin affection, Anti-typhoid, Anti-tubercular properties
<i>Arctostaphylos ura ursi</i>	Asteraceae	Diuretic, Diaphoretic, Gout, Skin affection
<i>Ascyrum hypericoides</i>	Asclepidaceae	Emetic and Cathartic
<i>Asparagus racemosus</i>	Liliaceae	Herb tonic, Diuretic, Galactagogue
<i>Berginia ligulata</i>	Saxifragaceae	Astringent. Diuretic, Lithonriptic
<i>Bridolia montana</i>	Eupobiaceae	Bark Astringent, Anthelminetic
<i>Caesalpinia huga</i>	caesalpinioceae	Root Diuretic, Lithonriptic
<i>Celosia argentla</i>	Amararanthaceae	Diarrhoea, Eye troubles, Sore mouth
<i>Chelidonium majus</i>	Papaveraceae	Diuretic, Antispasmodic, bitter
<i>Chimaphila numbellata</i>	Cruciferae	Diuretic, Expectorant, Stimulant
<i>Curcuma longa</i>	Zingiberaceae	Diuretic, Choleric, Hepatoprotective
<i>Desmodium styracifolium</i>	Papilionaceae	Roots Emmenagogue, Stomachic
<i>Didymocarpus pedicellata</i>	Gesneriaceae	Leaves Lithonriptic
<i>Dolichos biflorus</i>	Leguminoceae	Diuretic, Astringent, Tonic
<i>Eupatorium puipurecum</i>	Compositae	Diuretic, Antiscorbutic, cathartic, emetic
<i>Homonía riparia</i>	Euphorbiaceae	Root Laxative, Diuretic, Stone in bladder
<i>Mentha piperita</i>	Labiatae	Spasmolytic, Carminatives, Febrifuge, Nausea
<i>Musa pardisiaca</i>	Musaceae	Laxative, Uraemia, Nephritis, Hypertension
<i>Nothosaerva brachiata</i>	Laminaceae	Diuretic, Neuralgia, Convulsions
<i>Orthosiphon aristatus</i>	Labiatae	Diuretic, Anti-inflammatory, Antibacterial

<i>Parmelia perlata</i>	Parmeliaceae	Diuretic, Lithonriptic, Astringent
<i>Petroselinum crispum</i>	Umbelliferae	Mild diuretic, Abortifacient, Digestive
<i>Rotula</i>	Baraginaceae	Diuretic, Laxative, Piles, Stone in bladder
<i>Rubia cordifolia</i>	Rubiaceae	Antidysentric, Antiseptic, Deobstruent
<i>Spergularia rubra</i>	Caryophyllaceae	Cystitis and Urethral pain
<i>Trianthea portulacastrum</i>	Azizoaceae	Roots Cathartic, Irritant, Abortifacient, Astma, Leaves Diuretic
<i>Tribulus terrestris</i>	Zygophyllaceae	Diuretic, Micturition, Calculous affection
<i>Zingiber officinale</i>	Zingiberaceae	Carminative, Diaphoretic, Bronchitis, Rheumatism,

#### Other herbal components of these preparations are:

PLANT	FAMILY	USES
<i>Achyranthus aspera</i>	Amaranthaceae	Herb Diuretic, Renal dropsies
<i>Bueta frondosa</i>	Papilionaceae	Diuretic, Purgative
<i>Crateva religiosa</i>	Capparidaceae	Laxative, Calculus, Urinary affection
<i>Cyperus scariogus</i>	Cyperaceae	Diuretic, Diaphoretic, Astringent
<i>Didymocarpus pedicellata</i>	Gesneriaceae	Lithonriptic
<i>Dolichos biflorus</i>	Leguminaceae	Diuretic, Astringent, Tonic
<i>Elettaria cardamomum</i>	Zingiberaceae	Diuretic, Carminative, Aromatic stimulant
<i>Equisitum arvense</i>	Equisetaceae	Diuretic, Dropsy, Gravel, Renal affection
<i>Fogonia bruguieri</i>	Umbelliferae	Diuretic, Mildly carminative
<i>Garcinia pictoria</i>	Guttiferae	Dropsical affection
<i>Gynocardia odorata</i>	Flacourtiaceae	Fish poison ,Insecticidal, Skin aliments
<i>Hygrophila spinosa</i>	Acanthaceae	Strongly Diuretic
<i>Mimosa pudica</i>	Mimosaceae	Gravel, Urinary complaints
<i>Ocimum basilicum</i>	Labiatae	Stomachic, Alexipharmac, Antipyretic, Antihelminitic
<i>Onosma bracteatum</i>	Boraginaceae	Tonic, Demulcent, Diuretic, Spasmodic
<i>Pavonia odorata</i>	Malvaceae	Antipyretic, Stomachic, Refrigerant, Dysentery
<i>Rubia cordifolia</i>	Rubiaceae	Antidysentric, Antiseptic, Deobstruent
<i>Tectona grandis</i>	Verbenaceae	Biliousness, Bronchitis, Urinary discharge
<i>Vernonia cinerea</i>	Compositae	Anthelmintic, Diarrhoea

It has been described as Ashmarighana (destroyer of stone) by Charak, Sushruta and other authorities. Sushruta mentions its efficacy in vataj Ashmari with the characteristics of oxalate stone. Clinical investigations have shown that out of fifteen cases of urinary calculi, nine patients passed their stones within 8-10 days of treatment with *Dolichos biflorus*. Spontaneous passage of stones was common depending upon the size, site and mobility of the calculus<sup>27</sup>.

Metals and non-metals present in hard water at higher concentration might influence the outcome of the disease. Experiments in rats have shown that fluoride when fed at high levels accelerated the incidence of calcium oxalate crystalluria and enhanced the incidence of bladder stones diseases considerably. These studies suggest that other condition being conducive, excess intake of fluoride (possible through water) might aggravate the situation in men also. This concept is supported by reports that in Punjab the incidence is high in areas where fluoride content of drinking water is high<sup>28, 29, 30</sup>.

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