



## An Overview of the Most Important Medicinal Plants Used in Iranian Traditional Medicine for the Treatment of Kidney Stones: A mini-review article

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### Abstract

Urinary stones are hard objects that form in different areas such as the pelvis, urethra or bladder. Its prevalence is influenced by geographical, racial and ethnic changes, lifestyle changes and other factors. Medicinal plants have beneficial effects on human health due to their active ingredients and medicinal and antioxidant compounds. In this review study, the most important medicinal plants affecting kidney stones are reviewed and reported based on reliable sources and manuscripts of traditional Iranian medicine. For this purpose, for this review study, the sources of the most important books of traditional medicine were used. Sources and books used include Al-Abnieh An Haghayegh Al-Advieh by Abu Mansour Heravi, The Canon of Medicine Ibn Sina, Tazkaratol ololalbab, Aljameolaajab of Davoud Antaki, Tohfatal almoemenin of Hakim MoemenTonekaboni, Mokhzanol Aladvieh of Hakim Mohammadhossein Aghili, Alhavi of Zakariaye Razi and Makhzanol Advieh of Mohammadhossein Aghili Alavi Khorasani were the master of medicine. The results showed that medicinal plants such as Feverfew, Chickpea, Bindii, Grape leaves, Lithospermum off, Carumcopticum, *Matricaria recutita*, Grape, Prunus species, *Ferula persica*, *Apium graveolens*, *Nigella sativa*, *Peucedanum officinalis*, *Allium sativum*, *Centaurea cyan*, *Brassica rapa*, *Armenica vulgaris*, Cucumber, *Atriplex hortensis*, *Cucurbita maxima*, *Zingiber zerumbet*, *Arnebia euchroma* and *Origanum majorana* are the most important medicinal plants used in traditional Iranian medicine for the treatment of kidney stones.

### Introduction

A kidney stone is a hard body made up of minerals from urine. Stones are seen as single or multiple, in different sizes in different shapes and are formed in different areas such as pelvis, ureter or bladder [1,2]. Kidney stone is a common clinical disorder whose prevalence is influenced by geographical, racial and ethnic changes, lifestyle changes and other factors. Reports indicate that the prevalence of urinary tract stones is between two and fifteen percent [3-6]. Kidney stones are of the calcium type, which include calcium oxalate, calcium phosphate, or a combination of oxalate and phosphate [7]. Urinary and kidney stones are the third most common problem of the urinary system. The prevalence of kidney stones in Iran is between 5 to 10%, in Italy 3.1%, in the United States 12%, in Germany 6.8%, in the UK 3% and in Sweden 9.5% [8]. Studies have shown that medicinal plants with their active ingredients and medicinal and antioxidant compounds have beneficial effects on

human health and have a therapeutic effect on various organs of the body and various diseases. Common treatments for urinary stones include crusher, drug therapy, and surgery. Studies show that in different cultures and nations, people use traditional medicine and herbal medicine, including herbal medicines, to treat urinary stones [9-16]. In this review study, the most important medicinal plants affecting kidney stones are reviewed and reported based on the authoritative sources and manuscripts of traditional Iranian medicine.

### Method

For this review study, the sources of the most important books of traditional medicine were used. Sources and books used include

Sources and books used include Al-Abnieh An Haghayegh Al-Advieh by Abu Mansour Heravi, The Canon of Medicine Ibn Sina, Al-abniyyah on the Medicines, Abu Mansour Movafagh Heravi, Al-Qunun in Medicine Ibn Sina, Tazakarotol Ololalbab and the Mosque of Won-

derful Wonder, Daoud Antaky, his masterpiece of the believers is Hakim Mu'min Tinkabni, the drug store Hakim Muhammad Husayn Aqili, Al-Hawi Zakaria Razi and Makhzan Al-Adwiyah - Muhammad Husayn Aqili Alawi Khorasani [17-23].

## Results

After studying a number of important plants in the treatment of kidney stones were obtained. These plants Feverfew, Chickpea, Bindii, Grape leaves, *Carum copticum*, *Matricaria recutita*, Grape, Prunus species, *Ferula persica*, *Apium graveolens*, *Nigella sativa*, *Peucedanum officinalis*, *Allium sativum*, *Centaurea cyanus*, *Brassica rapa*, *Armenica vulgaris*, Cucumber, *Atriplex hortensis*, *Cucurbita maxima*, *Zingiber zerumbet*, *Arnebia euchroma* and *Origanum majorana* are the most important medicinal plants used in traditional Iranian medicine for the treatment of kidney stones. After searching, the most important plants with the effect of treatment on kidney stones in traditional medicine were extracted as follows :

### **Tanacetum parthenium:**

Tanacetum parthenium leaves and flowers of the Gramineae family have a warm and dry nature.

### **Cicer arietinum:**

Cicer seeds of the Fabaceae family have a warm and dry nature.

### **Cynodon dactylon:**

The aerial parts of *Cynodon dactylon* of the Gramineae family are cold and dry in nature.

### **Laurus nobilis:**

The leaves and bark of *Laurus nobilis* of the Lauraceae family have a warm and dry nature.

### **Lithos permum:**

The leaves of *Lithos permum* from the family Boraginaceae have a cold and dry nature.

### **Carum copticum:**

*Carum copticum* seeds of the Umbelliferae family have a warm and dry nature.

### **Matricaria recutita:**

The aerial part of *Matricaria recutita* from the Compositae family has a cold and dry nature.

### **Vitis vinifera:**

The trunk shell of *Vitis vinifera* from the Vitaceae family has a warmer nature.

### **Prunus species:**

The fruit of *Prunus* species from the Rosaceae family has a warm and dry nature.

### **Ferula persica:**

*Ferula persica* gum from the Umbelliferae family has a warm and dry nature.

### **Apium graveolens:**

The aerial parts of *Apium graveolens* of the Umbelliferae family are warm and dry in nature.

### **Nigella sativa:**

The seeds of *Nigella sativa* from the Ranunculaceae family have a warm and dry nature.

### **Peucedanum officinalis:**

The seeds of *Peucedanum officinalis* from the Umbelliferae

family have a warm and dry nature.

### **Allium sativum:**

*Allium sativum* berry of the Liliaceae family has a warm and dry nature.

### **Centaurea cyanus:**

The aerial part of *Centaurea cyanus* of the Compositae family has a warm and dry nature.

### **Asphodelus ramosus:**

The seeds of *Asphodelus ramosus* from the Liliaceae family have a warm and dry nature.

### **Aristolochia longa:**

The aerial parts of *Aristolochia longa* of the Aristolochiaceae family have a warm and dry nature.

### **Brassica rapa:**

The rhizome of *Brassica rapa* of the Cruciferae family has a warmer nature.

### **Armenica vulgaris:**

The kernel of *Armenica vulgaris* fruit of the Rosaceae family has a cold and wet nature.

### **Cucumis melovar:**

*Cucumis melovar* fruit. flexuosus of the Cucurbitaceae family has a colder and wetter nature.

### **Atriplex hortensis:**

The aerial parts of *Atriplex hortensis* of the Chenopodiaceae family are cold and wet in nature.

### **Cucurbita maxima:**

The seeds of *Cucurbita maxima* from the family Cucurbitaceae have a cold and wet nature.

### **Zingiber zerumbet:**

The root of *Zingiber zerumbet* from the Zingiberaceae family has a warm and dry nature.

### **Arnebia euchroma:**

The root of *Arnebia euchroma* from the Boraginaceae family has a cold and wet nature.

### **Origanum majorana:**

The leaves of *Origanum majorana* from the Labiatae family have a warm and dry nature.

## Discussion

In the sources of Iranian medical medicine, the etiology of kidney stone formation is considered to be the effect of strange or high heat on the viscous concentrate and the principle of treatment is to eliminate these two factors (24). A number of plants in this study have a warm temperament. Medicinal plants with a warm temperament are used to melt kidney stones. In this study, the warm temperament of plants is also mentioned and the reason for its effectiveness in traditional medicine is this warm temperament. People with kidney stones suffer from severe colic pain that often does not go away with common painkillers and is used to relieve pain (25, 26). Some of the herbs in this study also have analgesic effects and reduce the pain caused by kidney stones. The results of ethnobotanical studies of recent decades in different parts of Iran, for example in Lorestan province (located in southwestern Iran) show medicinal plants such as *Alhagi persarum*, *Berberis integrima*, *Capsella bursa*, *Dracocephalum imberbe*, *Glycyrrhiza glabra*, *Heracleum persicum*, *Matricaria aurea*,

*Sature macrosiphone*, *Tragapogon caricifolius*, *Ulmus minor*, *Zea mays* L. are used in cases of kidney stones (27). The results of an ethnobotanical study in Sistan and Baluchestan province (located in the south and east of Iran) showed that plants *Alhagi persarum* Boiss and *Rubia tinctorum* L are used to treat and eliminate kidney stones (28). In the study of ethnobotanics in the city of Kazerun located in the south of Iran, the plant *Nasturtium officinale* (L.) R. Br., *Alhagi camelorum*, *Tribulus terrestris* L. are used to excrete kidney stones (29). In the ethnobotanical knowledge of Kashan located in the center of Iran from *Cousinia alexeenkoana* Bornm plant. Used to treat kidney stones (30). In the ethnobotanical knowledge of Kerman in eastern Iran, *Petroselinum hortense* plant is used to excrete kidney stones (30). Plants of *Achillea santolina*, *Matricaria recutita* L., *Cuminum cyminum* L., *Nigella sativa* L., *Raphanus sativus* L., *Zea mays* L., *Plantago psyllium* L., *Linum usitatissimum* L., *Tribulus terrestris* L., *Prunus cerasus* L and *Foeniculum vulgare* Mill are anti-kidney stone plants (30). In Ilam *Adiantum capillus-veneris*, *Alhagi persarum* Boiss., *Allium akaka* Gmelin, *Cerasus mahaleb* (L.) Miller, *Gundelia tournefortii* L., *Noaea mucronata* (Forssk.) are used as anti-kidney stone plants (31). Some medicinal plants of Iranian ethnobotanical knowledge of traditional Iranian medicine are the same in terms of anti-kidney stone effect. The medicinal plants of this review study have anti-kidney stone properties in traditional medicine and due to the fact that they are native to Iran and are available, they can be used for clinical and experimental experiments and if effective to be used to produce effective natural drugs.

### Authors' contribution

All authors contributed equally to the manuscript.

### Conflicts of interest

The authors declared no competing interests.

### Ethical considerations

Ethical issues (including plagiarism, data fabrication, double publication and etc.) have been completely observed by author.

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