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GLOBALLY USED ANTIUROLITHIATIC PLANTS OF FAMILY APIACEAE

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ABSTRACT

Urolithiasis is a common problem afflicted for many centuries with high recurrence. This review covers the forty two (42) antiurolithiatic plants of family Apiaceae used in 18 different countries. Hopefully, this review will not only be useful for the general public but also attract the scientific world for antiurolithiatic drug discovery.

KEYWORDS: Urolithiasis, antiurolithiatic, natural products, drug development, Apiaceae.

INTRODUCTION

Urolithiasis is a common problem afflicted for many centuries with high recurrence. This review covers the forty two (42) medicinal plants of family Apiaceae used in 18 different countries such as Algeria, Bosnia, Bulgaria, Canada, Herzegovina, Iran, Iraq, Italy, Jordan, Kyrgyzstan, Lebanon, Libya, Pakistan, Palestine, Spain, Tunisia, Turkey and Uzbekistan. Their historical antiurolithiatc background shared in well known books of Dioscorides (17 plants), Ibn Sina (06 plants), Daoud al- Antaki (02 plants), Al Razi, Al-Baitar, Pliny the Elder and (01 plant contributed by each). Among the plant parts fruits were noted the most common (29%) followed by leaves and roots (17% each), whole plant (12%), seeds (10%), flowers (07%), stem (04%) and aerial parts (02%). In terms of preparation, decoction was observed most common (68%), followed by infusion (24%), oleo gum resin and plant gum (04% each). The route of administration is oral in all cases. Hopefully, this review will not only be useful for the general public but also attract the scientific world for antiurolithiatic drug discovery.

ABBREVIATIONS USED

h.= hour.

OD= once daily.

QID = four times a day.

tbsp.= table spoon.

TID= three times a day.

tsp.= tea spoon.

days= days required to dissolve / expel kidney stones.

before breakfast= every morning in empty stomach.

Whewellite: Calcium oxalate monohydrate

Table – 1: Antiurolithiatic plants of family Apiaceae.

Plants	Explanation
***Ammi majus* L.**	Plant infusion --- Jordan.[1]
	Pharmacological activities: Anti-inflammatory, diuretic, lithotriptic.[2]
***Ammi visnaga* (L.) Lam.**	Flowers, fruit decoction --- Algeria [3], Jordan, Palestine, Turkey[1, 4] ; seeds decoction / infusion --- Iraq.[5]
	Canada: 1 tsp. dried seeds, 8 oz. hot water, steep covered 30 mins. 4 oz. TID till stone expulsion.[6]
	Pharmacological activities: Antioxidant, astringent, diuretic, litholytic, lithotriptic.[2]
	Antiurolithiatic spectrum (reported): Seeds against whewellite.[7]
***Ammodaucus leucotrichus* Coss.**	Fruits --- Algeria.[8]
	Pharmacological activities: Lithotriptic.[8]
	Antiurolithiatic spectrum (reported): Fruits against whewellite.[9]
***Anethum graveolens* L.**	**Dioscorides (De Materia Medica):** Seeds are diuretic.[10]
***Angelica archangelica* L.**	Seeds --- Bulgaria[11] ; root decoction --- Palestine.[12]
	Palestine: Boil 100 g of root powder in 500 ml of water. 50 ml of this decoction 4 times a day.[12]
***Apium graveolens* L.**	**Dioscorides (De Materia Medica):** Roots / seeds are diuretic[10].
	Leaves decoction --- Bosnia, Herzegovina, Iran, Morocco[1, 13] ; root powder (5–7 g) taken orally with water --- India.[14]
	Pharmacological activities: Anti-inflammatory, antioxidant, astringent, diuretic, litholytic[2], lithotriptic.[15]
***Aristolochia clementis* Alain.**	**Al Razi / Rhazes (Al-Hawi fi al-Tibb):** Whole plant expels stones.[10]
***Athamanta cretensis* L.**	**Dioscorides (De Materia Medica):** Seeds are diuretic.[10]
***Berula erecta* (Huds.) Coville.**	**Dioscorides (De Materia Medica):** Aerial parts are diuretic and litholytic.[10]
***Bunium ferulaceum* Sm.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]
***Bunium persicum* (Boiss.) B. Fedtsch.**	Fruit decoction --- Uzbekistan , Kyrgyzstan.[1]
	Pharmacological activities: Analgesic, anti-inflammatory, antioxidant.[2]
***Cachrys ferulacea* (L.) Calest.**	**Dioscorides (De Materia Medica):** Whole plant is litholytic and used against strangury.[10]
***Carum carvi* L.**	**Dioscorides (De Materia Medica):** Fruits are diuretic.[10]

	Fruit decoction --- Iran, Turkey.[1]
	Pharmacological activities: Analgesic, anti-inflammatory, antioxidant, diuretic.[2]
***Carum copticum* L.**	**Ibn Sina (Al Qanoon Fit Tibb):** Fruits are litholytic and expel stones.[10]
	Fruit decoction --- Iran.[1]
	Pharmacological activities: Analgesic, anti-inflammatory, litholytic[2], lithotriptic.[16]
	Antiurolithiatic spectrum (reported): Seeds against whewellite.[16]
***Caucalis grandiflora* L.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]
***Centella asiatica* (Linn.) Urban.**	Plant decoction --- India.[1]
	Pharmacological activities: Anti-inflammatory, antioxidant.[2]
	Antiurolithiatic spectrum (reported): Whole plant against whewellite.[17]
***Cicuta virosa* L.**	Whole plant --- Pakistan.[18]
	Pharmacological activities: Lithotriptic.[18]
	Antiurolithiatic spectrum (reported): Whole plant against whewellite.[18]
***Coriandrum sativum* L.**	Seeds / leaves decoction --- India, Libya [1], Pakistan.[19]
	Pharmacological activities: Antioxidant, diuretic.[2]
***Cuminum cyminum* L.**	**Pliny the Elder (Naturalis Historis):** Fruits are diuretic.[10] **Al-Baitar (Al Advia Wal Aghdia):** Fruits are litholytic.[10]
	Fruits --- Iran.[20]
	Pharmacological activities: Lithotriptic.[15]
	Antiurolithiatic spectrum (reported): Fruits against whewellite.[21]
***Daucus carota* L. subsp. sativus (Hoffm.) Arcang.**	**Dioscorides (De Materia Medica):** Diuretic.[10] **Daoud al-Antaki (Tadhkirat Uli l-al-Bab wa l-Jami li-L-'Ajab al-'Ujab):** Roots are useful in renal stones.[22]
	Fruit / roots --- Lebanon[23] ; roots decoction / juice --- India, Turkey.[1]
	India: 500 ml of root juice BD for 15 days.[6]
	Pharmacological activities: Seeds are litholytic and lithotriptic.[24]
***Eryngium campestre* L.**	Flower / stem decoction --- India.[2]
	Pharmacological activities: Anti-inflammatory.[2]
***Eryngium creticum* Lam.**	Whole plant, stem and root --- Lebanon [23] ; roots / seeds infusion --- Palestine.[1]
	Pharmacological activities: Whole plant have antioxidant properties.[2]
***Eryngium glomeratum* Lam.**	Roots decoction --- Lebanon.[23]
***Eryngium planum* L.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]
***Ferula communis* L.**	Whole plant / fruit infusion --- Palestine.[12]
	Palestine: 50 g of plant steep in 150 ml of boiled water for 12 h. 10 ml from this infusion taken BD.[12]
***Ferula persica* Willd.**	**Ibn Sina (Al Qanoon Fit Tibb):** Oleo gum resin is litholytic.[10]
	Oleo gum resin --- Iran [1].
***Foeniculum vulgare* Mill.**	**Ibn Sina (Al Qanoon Fit Tibb):** Fruits are litholytic [10]. **Daoud al-Antaki (Tadhkirat Uli l-al-Bab wa l-Jami li-L-'Ajab al-'Ujab):** Fruits are litholytic [22].
	Fruit decoction --- Bosnia , Herzegovina, Iran [1], Palestine [12] ; leaves and seeds infusion --- Jordan [25].
	Palestine: Boil about 50 g of the fruits in 50 ml water. 25 ml of this decoction TID [12].
	Pharmacological activities: Analgesic, anti-inflammatory, antioxidant, diuretic.[2]

***Gundelia tournefortii* L.**	Leaves --- Iran.[13]
***Lagoecia cuminoides* L.**	**Dioscorides (De Materia Medica):** Litholytic and used against strangury.[10]
***Levisticum officinale* W. D. J. Koch.**	**Ibn Sina (Al Qanoon Fit Tibb):** Fruits are diuretic.[10]
	Fruit decoction --- Iran.[1]
	Pharmacological activities: Diuretic.[2]
***Orlaya grandiflora* (L.) Hoffm.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]
***Pastinaca sativa* L.**	**Dioscorides (De Materia Medica):** Roots are diuretic.[10]
***Petroselinum crispum* (Mill.) Fuss.**	**Dioscorides (De Materia Medica):** Fruits are diuretic.[10] **Ibn Sina (Al Qanoon Fit Tibb):** Whole plant is litholytic and expel stone.[10]
	Flowers / stem decoction --- Iran, Iraq[1, 5] ; leaves decoction --- Italy, Tunisia[26]; leaves infusion / roots decoction --- Bosnia, Herzegovina, Iran, Turkey, Spain[1, 27]; fruits decoction --- Palestine.[12]
	Palestine: Boil 100 g of fruit powder in 600 ml water. 150 ml of the decoction QID.[12]
	Pharmacological activities: Antioxidant, diuretic, litholytic, lithotriptic.[2]
***Petroselinum hortense* Hoffm.**	Fruits / leaves --- Iran.[20]
***Petroselinum sativum* Hoffm.**	Leaves decoction / infusion --- Jordan, Palestine.[1]
	Jordan: 150 ml of leaves decoction TID till stone expulsion.[6]
	Pharmacological activities: Diuretic, litholytic, lithotriptic.[2]
	Antiurolithiatic spectrum (reported): Leaves against whewellite.[28]
***Peucedanum grande* C.B. Clarke.**	**Ibn Sina (Al Qanoon Fit Tibb):** Fruits are diuretic[10]
	Fruit decoction --- Iran.[1]
	Antiurolithiatic spectrum (reported): Fruits against whewellite.[29]
	Pharmacological activities: Diuretic, litholytic, lithotriptic.[24]
***Peucedanum officinale* L.**	Plant gum --- Iran.[30]
	Pharmacological activities: Diuretic.[30]
***Pimpinella anisum* L.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]
	Fruit decoction --- Iran, Palestine.[1, 13]
	Pharmacological activities: Analgesic, anti-inflammatory, antioxidant, astringent, diuretic, litholytic.[2]
***Pituranthos scoparius* (Coss. & Durieu) Schinz.**	Roots decoction --- Algeria.[3]
***Prangos acaulis* Bornm.**	Aerial parts decoction --- Iran.[13]
***Scandix pecten-veneris* L.**	**Dioscorides (De Materia Medica):** Diuretic.[10]
***Smyrnium olusatrum* L.**	**Dioscorides (De Materia Medica):** Whole plant is diuretic.[10]

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