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# An ethnobotanical study of medicinal plants used in treatment of kidney stones and kidney pain in Lorestan province, Iran

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## ABSTRACT

Kidney stones are the third most frequent disorder of the urinary tract, after infections and pathological disorders of the prostate. Most affected patients suffer from severe colicky pain. The use of herbs for treating diseases has been a common method since ancient times. This study aimed to identify and report the most important and effective herbs for treating kidney stones and kidney pain in Lorestan province (west of Iran). We accomplished our goal by gathering and integrating indigenous data from local inhabitants of Lorestan. Data were gathered with cooperation of the agents of public health service network all over the towns of Dorud, Boroujerd, Khorramabad, Aleshtar, Poledokhtar, Aligoodarz, Nurabad and Kouhdasht. Prepared questionnaires were distributed to the health system trained volunteers. These trained inquirers attended in villages and recorded the local herbal therapy methods and information. Finally, 17 plants from 12 families were identified. Besides predicating the traditionally believed effects of these herbs, it is essential for researchers to find out the actuality of their clinical effectiveness and active substances. Once the positive effects of these herbs were proved to be true, it is possible to produce drugs which are useful in treatment and controlling kidney stones and pain.

**KEY WORDS:** Lorestan province, Herbs, Traditional medicine, Kidney stones, Kidney pain, Iran.

## 1. INTRODUCTION

Kidney stones are the third most frequent disorder of the urinary tract, after infections and pathological disorders of the prostate. Since most affected patients suffer from severe colicky pain which can not be eliminated by conventional analgesics, opioid drugs are used to relieve pain (Tanagho, 1980). Iran is one of the countries which are located on the "kidney stone belt". Kidney stone prevalence in this region is reported to be 2-3 percent (Erbagci, 2003; Pearle, 2007). Kidney stone is a common clinical disorder and its prevalence is influenced by lifestyle changes, geographical changes, race, ethnicity and other factors (Leonardo and Reyes Rabanal; Stamatelou, 2003).

Kidney stones cause severe pain. Pain can also be due to renal infection (pyelonephritis). Moving stones are the main cause of pain specially when they move from the kidneys to the ureter and pass into the bladder. This leads to frequent severe pain. Pain is an unpleasant sensory and emotional experience associated with actual tissue damage or harm to another type of tissue. Pain is the most common reason for medical advice in the United States (International Association for the Study of Pain, 2010; Turk & Dworkin, 2004).

In addition to pain, patients affected with kidney stone may develop severe urinary tract obstruction and hydronephrosis, infection and bleeding, thus in some cases breaking the stone or surgery is needed for removing it. In addition to the high cost of surgery and breaking up the stones, various side effects such as urinary tract infections are expected urinary surgical intervention. Hence, special attention is paid to the use of herbal preparations.

In many countries and cultures, a variety of medicinal plants are used for treating diseases and there is an extreme belief in their effectiveness (Ghasemi Pirbalouti, 2013; Bahmani, 2012; Bahmani, 2014). A collective effort is needed to predicate the herbal therapeutic knowledge of Lorestan province. In this study we tried to provide a list of indigenous medicinal plants which are used to treat kidney stons and pain traditionally.

## 2. MATERIALS AND METHODS

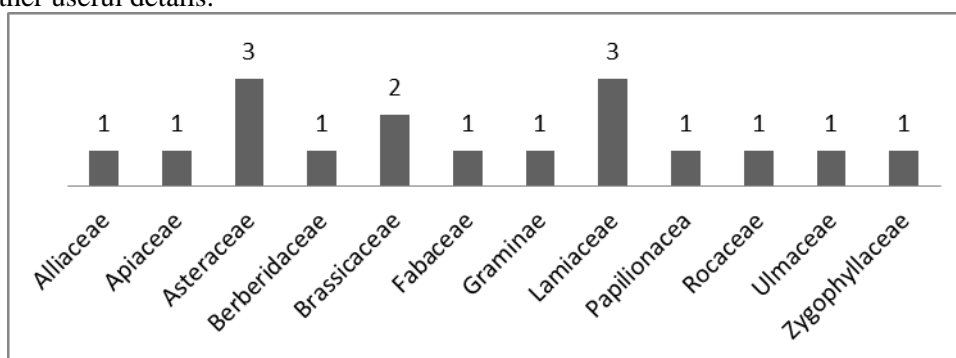
**2.1. The study area:** Lorestan Province is a province of western Iran, located latitude and longitude of 33.4871° N, 48.3538°. Lorestan has four different climates (semi-dry, semi- moist temperate , semi- moist cold, altitude climate ). Its area is approximately 28,300 square acres of land. Minimum height above sea level is 330 m in Pole-Zal and maximum height above sea level is 4050 m in Oshtoran-kooch. The province has a varied climate

and this variability is quite evident from the northeast to the southwest. Lorestan is neighbored with Hamedan and Markazi provinces in north, Isfahan in east, Khuzestan in south and Ilam and Kermanshah in west.

**2.2. Method of identifying and collecting plants:** Information of traditional herbs were provided through interviews and questionnaires, with assistance of Management and Planning Organization of Lorestan province and Lorestan University of Medical Sciences. Local inhabitants data were also considered through cooperation with Health Networks of Dorud, Burujird, Khorramabad, Aleshtar Poldokhtar, Aligoodarz, Nurabad and Kouhdasht. Prepared questionnaires were distributed to the health system trained volunteers. The questionnaire included inquiries about the location, characteristics of the interviewee, local name of the plant, usable parts, preparation method, growing seasons and species which can be kept at home. Trained inquirers attended in villages and recorded the local herbal therapy methods and traditions. Interviewees were among the seniors of the village known to be aware of herbal effects. Gathered information and results were put in prepared tables.

### 3. RESULTS

After totalizing and classifying the collected data, a total number of 17 medicinal plants from 12 families were identified to be effective on control and treatment of kidney stone and pain which are marked in table 1 in addition with other useful details.



**Graph 1. Frequency of plant families**

**Discussion:** Kidney stone is the third most frequent disorder of the urinary tract. Renal colic is the sudden onset of an acute severe pain which starts from the flank and spreads to the groin. The pain is recurring intermittently with an increasing severity (Kasper, 2005). In this study, we have compared the therapeutic effects of these reported plants with those of the published literature.

Alhagi (or camel thorn) distillate which has cold nature and different characteristics from its raw form or tisane form in terms of traditional medicine, is used for expulsion of bile and kidney and bladder stones, as well as anti-whooping cough, fever and chills. It also has diuretic effect and no specific side effect is reported till now (Zargari, 1995; Dehkordi, 2002). In a remarkable study Cyrus et al showed the significant effect of camel thorn on the expulsion rate of kidney stones and concluded that it may also speed up the expulsion process (Cyrus, 2010). Traditional sources and clinical studies suggest that camel thorn plant has stone-expulsive effect. Barberry is known to have polyphenolic compounds, pectin, gum, vitamin C and malic acid. Most therapeutic and pharmacological effects of barberry is attributed to the most important alkaloid found in its root and stem bark, berberine (Kazemi, 2008; Imanshahidi, 2008). Barberry has also been reported to have anti-inflammatory effects (Shamsa, 1994).

Watermelon has ingredients such as colocythis, colocythetin, plant phytosterols, gum, pectin, albuminoids, etc. (Wasfi, 1994; Afifia, 1973; Darwish, 1974). Studies show that water boiled branches of lemon balm has analgesic and anxiolytic effects of (Miladi-Gorji, 2005; Miladi-Gorji, 2005). Previous studies confirm reported effect is in our study. Licorice has a curative effect on rheumatism and arthritis (Akhondzadeh, 1979; Dijsselbloem, 2004). Chamomile has sedative and anti-agitation effect (Barene, 2003). Fountain grass is used as blood purifier in traditional medicine and has been reported to increase blood antioxidant levels. Fountain grass is diuretic and tranquilizes neuralgia (Samsam-Shariaat, 1995; Gill, 2007; Sefidkon, 2013). Roses are used as sedatives, anti-depressants, and believed to eliminate insomnia (Lawless, 1995; Tisserand and Balacs, 1995). All aforesaid effects of licorice, chamomile, fountain grass and roses in literature, confirm effects which were known traditionally in Lorestan province. Marian thistle has various pharmacological effects including antioxidant and anti-cancer effects and protects hepatocytes. These effects are attributed to the different kinds of flavonolignans which are found in silymarin. Silymarins are mixed compounds of isosilybins (A and B), silybins A, silybins B, silydianin, taxifolin and silychristin (Osuchowski, 2004; Der Marderosian, 2001; Gazak, 2007; Gebhardt, 2002; Kummer, 2001). Analgesic effects of Marian thistle seem to be related to the flavonolignans of silymarin. Salsify is used in traditional stone expulsion therapy (Shafizadeh, 2002). It has the same usage in Lorestan province.

By comparing the therapeutic effects reported in our study with previously published literature, we concluded that some of the reported effects in our study are totally new and some others have close similarities with other studies, thus the validity of this study appears to be high.

It is necessary for researchers to find out the actuality of clinical effectiveness of the reported herbs and their active substances (Bahmani, 2014; Delfan, 2014; Asadi-Samani, 2014; Saki, 2014; Asadbeygi, 2014; Karamati, 2014; Bahmani, 2015; Gholami-Ahangaran, 2012; Amirmohammadi, 2014; Eftekhari, 2012; Bahmani, 2012; Bahmani, 2013; Delfan, 2015). Once the positive effects of these herbs proved, it is possible to produce drugs which are useful in treatment and management of kidney stones and its related pain.

**Table 1. Complete information of ethnobotany, preparation method and therapeutic effects of herbs effective in kidney stone and pain relief in Lorestan province.**

| Scientific name                | Family         | Local name      | Persian name   | Usable part                     | Preparation method                      | Gathering season       | Traditional/Therapeutic effect |
|--------------------------------|----------------|-----------------|----------------|---------------------------------|---|------------------------|--------------------------------|
| <i>Alhagi persarum</i>         | Fabaceae       | Hushtar-khar    | Khar-e-shotor  | root                            | tisane                                  | spring                 | Kidney pain                    |
| <i>Berberis integrima</i>      | Berberidaceae  | Zereshk         | zereshk        | fruit                           | tisane                                  | spring                 | Stone expulsion                |
| <i>Capsella bursa</i>          | Brassicaceae   | Shomi           | hendevane      | Fruit and leaf                  | Raw or leaf tisane                      | Spring, summer         | Kidney stone management        |
| <i>Dracocephalum imberbe</i>   | Lamiaceae      | zaravi          | Badranj booyeh | Stem and leaf                   | Leaf tisane                             | spring                 | Kidney pain                    |
| <i>Glycyrrhiza glabra</i>      | papilionacea   | melim           | Shirin bayan   | Wholeparts arts specially roots | Root is chewn                           | Spring, autumn         | Kidney pain                    |
| <i>Heracleum persicum</i>      | Apiaceae       | golpar          | golpar         | Flower and leaf                 | tisane                                  | spring                 | Kidney pain                    |
| <i>Matricaria aurea</i>        | Asteraceae     | Gole bayene     | babooneh       | petals                          | tisane                                  | spring                 | Kidney pain                    |
| <i>Nasturtium officinale</i>   | brassicaceae   | balmak          | Alaf-e-cheshme | leaf                            | tisane                                  | Four seasons           | Kidney stone management        |
| <i>Nectaro scordeum</i>        | Alliaceae      | aneshk          | Piaz tabestani | twigg                           | Raw or inside sauce or beverages like   | spring                 | Stone expulsion                |
| <i>Rosa damascena</i>          | Rocaceae       | Lili-sorkhe     | rose           | fruit                           | tisane                                  | summer                 | Kidney pain                    |
| <i>Satureja macrosiphone</i>   | Lamiaceae      | marze           | marze          | Leaf and stem                   | Raw with food                           | spring                 | Stone expulsion                |
| <i>Silybum marianum</i>        | Asteraceae     | Khar-gandomdone | Khar-maryam    | flower                          | tisane                                  | Spring and mid summer  | Kidney pain                    |
| <i>Stachys lavandulifolia</i>  | Lamiaceae      | pashmine        | Chay koochi    | flower                          | tisane                                  | spring                 | Kidney pain                    |
| <i>Tragapogon caricifolius</i> | Asteraceae     | sheng           | shang          | Whole parts specially leaves    | Raw or tisane                           | spring                 | Stone expulsion                |
| <i>Tribulus terrestris</i>     | Zygophyllaceae | Pee-kola        | Khar khasak    | seeds                           | tisane                                  | Spring, summer, autumn | Kidney pain                    |
| <i>Ulmus minor</i>             | Ulmaceae       | Vezm            | ooja           | Extract, stem, roots            | Boiled infusion is drunk in the morning | Four seasons           | Stone expulsion                |
| <i>Zea mays L.</i>             | Graminae       | Khayate-zorat   | Kokol zorrat   | Corn silk                       | tisane                                  | summer                 | Stone expulsion                |

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**REFERENCES**

- Afifia MD, Sayed MS and Balbaa SI, Nitrogenous bases of different organs of *Citrullus colocynthis*, *Planta Medica*, 24, 1973, 260-265.
- Akhondzadeh S, *Encyclopedia of Iranian Medicinal Plants*, Institute of Medicinal Plants jahade-Daneshgahi, arjmand publication, Iran, 1979, 82.
- Amirmohammadi M, Khajoenia S, Bahmani M, Rafieian-Kopaei M, Eftekhari Z, Qorbani M, *In vivo* evaluation of antiparasitic effects of *Artemisia abrotanum* and *Salvia officinalis* extracts on *Syphacia obvelata*, *Aspiculoris tetrapetra* and *Hymenolepis nana* parasites, *Asian Pac J Trop Dis.*, 4(1), 2014, S250-S254.
- Asadbeigi M, Mohammadi T, Rafieian-Kopaei M, Saki K, Bahmani M, Delfan B, Traditional effects of medicinal plants in the treatment of respiratory diseases and disorders: an ethnobotanical study in the Urmia, *Asian Pac J Trop Med.*, 7(1), 2014, 364-368.
- Asadi-Samani M, Bahmani M, Rafieian-Kopaei M, The chemical composition, botanical characteristic and biological activities of *Borago officinalis*: a review, *Asian Pac J Trop Med.*, 7(1), 2014, 22-28.
- Bahmani M and Eftekhari Z, An ethnoveterinary study of medicinal plants in treatment of diseases and syndromes of herd dog in southern regions of Ilam province, Iran, *Comp Clin Pathol.*, 22, 2012, 403-407.
- Bahmani M, Banihabib EKH M, Rafieian-Kopaei M and Gholami-Ahangaran M, Comparison of Disinfection Activities of Nicotine with Copper Sulphate in water Containing *Limnatis nilotica*, *Kafkas Univ Vet Fak Derg.*, 21 (1), 2015, 9-11.
- Bahmani M, Farkhondeh T and Sadighara P, The anti-parasitic effects of *Nicotina tabacum* on leeches, *Comparative Clinical Pathology*, 21(3), 2012, 357-359.
- Bahmani M, Forouzan SH, Fazeli-Moghadam EA, Rafieian-Kopaei M, Adineh A and Saberianpour SH, Oak (*Quercus branti*): An overview, *J Chem Pharmaceutical Res.*, 7(1), 2015, 634-639.
- Bahmani M, Forouzan Sh, Rafieian-Kopaei M, Eftekhari Z, Evaluating the Anti-Leech Effects of Methanolic Extracts of *Peganum harmala* L. and *Olea europaea* L. on immature worm *Limnatis nilotica*, *Asian Pac J Trop Dis.*, 2012, 1-6.
- Bahmani M, Karamati SA, Banihabib EK, Saki K, Comparison of effect of nicotine and levamisole and ivermectin on mortality of leech, *Asian Pac J Trop Dis.*, 4(1), 2014, 477-480.
- Bahmani M, Karamati SA, Hassanzadazar H, Forouzan SH, Rafieian-Kopaei M, Kazemi-Ghoshchi B, Asadzadeh J, Kheiri AG, Ehsan Bahmani E, Ethnobotanic study of medicinal plants in Urmia city: identification and traditional using of antiparasites plants, *Asian Pac J Trop Dis.*, 4(2), 2014, 906-910.
- Bahmani M, Mirhoseini M, Shirzad HA, Sedighi M, Shahinfard N and Rafieian-Kopaei M, A Review on Promising Natural Agents Effective on Hyperlipidemia. *Journal of Evidence-Based Complementary & Alternative Medicine* 2015.
- Bahmani M, Rafieian M, Baradaran A, Rafieian S, Rafieian-kopaei M, Nephrotoxicity and hepatotoxicity evaluation of *Crocus sativus* stigmas in neonates of nursing mice, *J Nephrothol.*, 3(2), 2014, 81-85.
- Bahmani M, Rafieian-Kopaei M, Hassanzadazar H, Saki K, Karamati SA, Delfan B, A review on most important herbal and synthetic antihelmintic drugs, *Asian Pac J Trop Med.*, 7(1), 2014, 29-33.
- Bahmani M, Rafieian-Kopaei M, Jeloudari M, Eftekhari Z, Delfan B, Zargaran A, Forouzan SH, A review of the health effects and uses of drugs of plant licorice (*Glycyrrhiza glabra* L.) in Iran, *Asian Pac J Trop Dis.*, 4(2), 2014, 847-849.

Bahmani M, Saki K, Asadbeygi M, Adineh A, Saberianpour SH, Rafieian-Kopaei M, Bahmani F and Bahmani E, The effects of nutritional and medicinal mastic herb (*Pistacia atlantica*), J Chem Pharmaceutical Res., 7(1), 2015, 646-653.

Bahmani M, Saki K, Gholami-Ahangaran M, Parsaei P, Mohsenzadegan A, Zia-Jahromi N, Evaluating the Anti-Leech Activity of Methanolic Extract of *Matricaria chamomilla* L. Comparing with Ivermectin, Mebendasole, Praziquantel, Rafoxanide, Febantel and Albendazole, Mid East J Sci Res., 12 (2), 2012, 260-263.

Bahmani M, Saki K, Golshahi H, Rafieian-Kopaei M, Abdali N, Adineh A, Namdari N and Bahmani F, Ethnobotanical and therapeutic uses of camomille, J Chemical Pharmaceutical Res., 7(1), 2015, 640-645.

Bahmani M, Saki K, Rafieian-Kopaei M, Karamati SA, Eftekhari Z, Jelodari M, The most common herbal medicines affecting Sarcomastigophora branches: a review study, Asian Pac J Trop Med., 7(1), 2014, 14-21.

Bahmani M, Shirzad HA, Majlesi M, Shahinfard N, Rafieian-Kopaei M, A review study on analgesic applications of Iranian medicinal plants, Asian Pac J Trop Med., 7(1), 2014, 43-53.

Bahmani M, Shirzad HA, Rafieian S and Rafieian-Kopaei M, Silybum marianum: Beyond Hepatoprotection, Journal of Evidence-Based Complementary & Alternative Medicine, 2015.

Bahmani M, Vakili-Saatloo N, Gholami-Ahangaran M, Karamati SA, Khalil-Banihabib E, Hajjigholizadeh Gh, A comparison study on the anti-leech effects of onion (*Allium cepa* L) and ginger (*Zingiber officinale*) with levamisole and triclabendazole, J HerbMed Pharmacol., 2(1), 2013, 1-3.

Bahmani M, Zargaran A, Rafieian-Kopaei M, Saki M, Ethnobotanical study of medicinal plants used in the management of diabetes mellitus in the Urmia, Northwest Iran, Asian Pac J Trop Med., 7(1), 2014, 348-354.

Bahmani M, Zargaran A, Rafieian-Kopaei M, Identification of medicinal plants of Urmia for treatment of gastrointestinal disorders, Rev Bras Farmacogn., 24(4), 2014, 468-480.

Bahmani M, Rafieian-Kopaei M, Medicinal plants and secondary metabolites for leech control, Asian Pac J Trop Dis., 4(4), 2014, 315-316.

Barene I, Daberte I, Zvirgzdina L, Iriste V, The complex technology on products of German chamomile, Medicina, 39(2), 2003, 127.

Cyrus A, Goodarzi D, Jahangiri V, The effect of Alhagi Pseudalhagi distillate on ureteral stone expulsion, Arak Medical University Journal (AMUJ), 13(1), 2010, 56-62.

Darwish SM, Balbaa ST and Afifi MS, The glycosidal content of the different organs of *Citrullus colocynthis*, Planta Medica, 26, 1974, 293-298.

Dehkordi N, Iranian Herbal Pharmacopeia, 1st ed., Vol 1, Tehran: HBI Publication, 2002.

Delfan B, Bahmani M, Eftekhari Z, Jelodari M, Saki K, Mohammadi T, Effective herbs on the wound and skin disorders: a ethnobotanical study in Lorestan province, west of Iran, Asian Pac J Trop Dis., 4(2), 2014, 938-942.

Delfan B, Bahmani M, Hassanzadazar H, Saki K, Rafieian-Kopaei M, Identification of medicinal plants affecting on headaches and migraines in Lorestan Province, West of Iran, Asian Pac J Trop Med., 7(1), 2014, 376-379.

Delfan B, Bahmani M, Rafieian-Kopaei M, Delfan M, Saki K, A review study on ethnobotanical study of medicinal plants used in relief of toothache in Lorestan Province, Iran, Asian Pac J Trop Dis., 4(2), 2014, 879-884.

Delfan B, Kazemeini HR, Bahmani, Identifying Effective Medicinal Plants for Cold in Lorestan Province, West of Iran, Journal of Evidence-Based Complementary & Alternative Medicine, 2015.

DerMarderosian A, The review of natural products, 1st ed. Facts and Comparisons: St. Louis, 2001, 405-9.

Dijsselbloem N, Vanden Berghe W, De Naeyer A, Haegeman G, Soy isoflavone phytopharmaceuticals in interleukin-6 affections, Multipurpose nutraceuticals at the crossroad of hormone replacement, anti-cancer and anti-inflammatory therapy, Biochem Pharmacol., 68(6), 2004, 1171 - 85.

Eftekhari Z, Bahmani M, Mohsenzadegan A, Gholami-Ahangaran M, Abbasi J, Alighazi N, Evaluating the anti-leech (*Limnatis nilotica*) activity of methanolic extract of *Allium sativum* L. compared with levamisole and metronidazole, Comp Clin Path., 21, 2012, 1219-1222.

Erbagci A, Erbagci AB, Yilmaz M, Yagci F, Tarakcioglu M, Yurtseven E, Pediatric urolithiasis evaluation of risk factors in 95 children, *Scand J Urol Nephrol.*, 37(2), 2003, 129- 33.

Gazak R, Wahterova D and Kren V, Silybin and Silymarin. New and emerging applications in Gebhardt R, Oxidative stress, plant-derived antioxidants and liver fibrosis, *Planta Med.*, 65, 2002, 289-90.

Ghasemi Pirbalouti A, Momeni M and Bahmani M, Ethnobotanical study of medicinal plants used by Kurd tribe in Dehloran and Abadan Districts, Ilam province, Iran, *Afr J Tradit Complement Altern Med.*, 10(2), 2013, 368.

Gholami-Ahangaran M, Bahmani M, Zia-Jahrom N, *In vitro* antileech effects of *Vitis vinifera* L., niclosamide and ivermectin on mature and immature forms of leech *Limnatis nilotica*, *Glob Vet*, 8, 2012, 229-232.

Gholami-Ahangaran M, Bahmani M, Zia-Jahromi N, Comparative and evaluation of anti-leech (*Limnatis Nilotica*) effect of Olive (*Olea Europaea* L.) with levamisol and tiabendazole, *Asian Pac J Trop Dis.*, 2(1), 2012, 101-103.

Gill CI, Haldar S, Boyd LA, Bennett R, Whiteford J, Butler M, Watercress supplementation in diet reduces lymphocyte DNA damage and alters blood antioxidant status in healthy adults, *Am J Clin Nutr.*, 85(2), 2007, 504-10.

Imanshahidi M and Hosseinzadeh H, Pharmacological and therapeutic effects of *Berberis vulgaris* and its active constituent, berberine, *Phytotherapy Res.*, 22, 2008, 999 - 1012.

International Association for the Study of Pain | Pain Definitions. Retrieved 12 October, 2010.

Karamati SA, Hassanzadazar H, Bahmani M, Rafieian-Kopaei M, Herbal and chemical drugs effective on malaria, *Asian Pac J Trop Dis.*, 4(2), 2014, 599-601.

Kasper DL, Braunwald E, Hauser S, Longo D, Jameson JL, Fauci AS, Harrison's principles of internal medicine, 16th ed., Vol 2, USA, McGraw-Hill Professional, 2005.

Kazemi E, Talari S and Hooshyar H, The effect of an alcoholic extract of *Berberis vulgaris* on cutaneous leishmaniasis (*L. major*) in BALB/c mice, *Journal of School of Public Health and Institute of Public Health Res.*, 5 (3), 2008, 35 - 42.

Kummer V, Maskova J, Canderle J, Zraly Z, Estrogenic effects of silymarin in ovariectomized rats, *Vet Med-Czech*, 46, 2001, 17-23.

Lawless J, *The Illustrated Encyclopedia Of Essential Oils*. Rockport, MA: Element Books, Ltd., 1995, 56-7.

Leonardo R, Reyes Rabanal MD, Instituto de Nefrología, Havana, uba. Clinical Epidemiology of Urolithiasis in Tropical areas, *medicine, Current Medicinal Chemistry*, 14, 2007, 1-23.

Miladi-Gorji H, Rashidy-Pour A, Vafaei AA, Taherian AA, The role of opioid receptors on antinociception effects of the aqueous extracts of *Melissa officinalis* in mice, *J. Hormozgan University of Medical Sci.*, 10 (1), 2005, 23 - 8.

Miladi-Gorji H, Vafaei AA, Rashidy-Pour A, Taherian AA, Jarrahi M, Emami abarghoii M, Sadegi H, Anxiolytic Effects of the aqueous extracts of *Melissa officinalis* and the role of opioid receptors in mice, *J. Iran University of Medical Sci.*, 13(47), 2005, 145 - 53.

Osuchowski MF, Johnson VJ, He Q and Sharma RP, Alteration in regional brain neurotransmitters by silymarin, a natural antioxidant flavonoid mixture, in BALB/c mice, *Pharm Biol.*, 42, 2004, 384-9.

Pearle MC, Urinary Lithiasis Patrin AW, Peter CA, In: Wein AJ, Kavoussi LR, Novick AC, Campbell-Walash Urology, Philadelphia, Saunders, 2, 2007, 1363-1525.

Portis AJ, Sundaram CP, Diagnosis and initial management of kidney stones, *Am Fam Physician*, 63(7), 2001, 1329-38.

Presti JC, Kane JCh, Shinohara K, Carroll PR, Neoplasms of the prostate gland, In: Tanagho EA, McAninch JW, Smith's general urology, Philadelphia: Mc Graw Hill, 2008, 348-55.

Saki K, Bahmani M, Rafieian-Kopaei M, Hassanzadazar H, Dehghan K, Bahmani F, Asadzadeh J, The most common native medicinal plants used for psychiatric and neurological disorders in Urmia city, northwest of Iran, *Asian Pac J Trop Dis.*, 4(2), 2014, 895-901.

Saki K, Bahmani M, Rafieian-Kopaei M, The effect of most important medicinal plants on two important psychiatric disorders (anxiety and depression)-a review, *Asian Pac J Trop Med.*, 7(1), 2014, 34-42.

Samsam-Shariaat H, *Medicinal plants: Maintenance and Proliferation*, 1st ed., Isfahan, Mani Press, 1995, 192.

Sefidkon F, Torabi Sagvand B, Naderi M and Ghoshegir S.A, Comparison of anticancer effects of nanocapsules of *Nasturtium officinalis* (L.) R. Br. extract with methanolic extract and its fractions, *Iranian Journal of Medicinal and Aromatic Plants*, 29(1), 2013, 35-50.

Shafizadeh F, *Popular Medicinal Plants of Lorestan*, Tehran. Hayan Publication, 2002.

Shamsa F, Ahmadiani A, Khosrokhavar R, Antihistaminic and anticholinergic activity of barberry fruit (*Berberis vulgaris*) in the guinea-pig ileum, *J Ethnopharmacol.*, 64, 1999, 161-6.

Stamatelou KK, Francis ME, Jones CA, Time trends in reported prevalence of kidney stones in the United States: 1976-1994. *Kidney Int.*, 63, 2003, 1817-23.

Tanagho Jack W, McAninch. *Smith's General Urology*, Sobhanian (Translator) K. Hafez, M., Alizadeh, formal, casual, 0.325 to 21 and 299 – The first printing, publishing cultural institutions Teymourzadeh – Tabib Published, Tehran, 18.138. Tisserand R, Balacs T, *Essential Oil Safety: A Guide for Health Care Professionals*, Edinburgh: Churchill Livingstone, 1995, 210.

Turk DC & Dworkin RH, What should be the core outcomes in chronic pain clinical trials, *Arthritis Research & Therapy*, 6 (4), 2004, 151–154.

Wasfi IA, Some pharmacological studies on *Citrullus colocynthis*, *Journal of herbs, spices and medical plants*, 2, 1994, 65-79.

Zargari A, *Medical Plants*, Vol 2, Tehran, University Publication, 1995.