Journal of Pharmacognosy and Phytochemistry

Available online at www.phytojournal.com

J P P Journal of Pharmacognosy and Phytochemistry

E-ISSN: 2278-4136
P-ISSN: 2349-8234
JPP 2015; 4(1): 83-86
Received: 22-03-2015
Accepted: 01-04-2015

Lana Yousif Mutalib
Mc. S. in Pharmacognosy, Assistant Lecturer Pharmacognosy Department, Pharmacy College, Hawler Medical University, Hawler, Erbil, Iraq

Correspondence:
Lana Yousif Mutalib
Mc. S. in Pharmacognosy, Assistant Lecturer Pharmacognosy Department, Pharmacy College, Hawler Medical University, Hawler, Erbil, Iraq

Comparison between phytotherapy and conventional drug therapy used in urolithiasis management in Hawler city, Kurdistan Region\Iraq

Lana Yousif Mutalib

Abstract
Phytotherapy play an important role in the management of urolithiasis all over the world. The objectives of the study were to find the preference of one of the therapy regime used by the urologists in Hawler city and the reasons of their preference, and compare the clinically used drugs formula with that traditionally used by local herbalists. Collection of drugs used in urolithiasis cases from survey done on pharmacies available in Hawler city; classify them according to their origin. Comparison among different classes of drugs done by questionnaire data collected from 40 Urologist. Comparison between phytotherapy regime used by both the physicians and traditional herbalists and local healers. 47% of physicians preferred phytotherapeutic agents, while 16% preferred synthetic drugs, and 37% preferred combination. *Ammi visnaga* plant is a universal plant used in the phytotherapeutic regime by both physicians and traditional herbalists and local healers. Phytotherapeutic agents preferred over the combination drugs, the latter group were preferred over the synthetic. *Ammi visnaga* plant used as herbal remedy in kidney stone cases by both urologists and local herbalists.

Keywords: Herbalists, phytotherapeutic agent, *Ammi visinaga*

1. Introduction
Phytotherapy is referred to plant preparations obtained by extraction, fractionation, purification, drying and concentration. These products enter health care system either directly or after addition of additives to the active ingredients [1, 2]. Phytotherapy have been promoted after gradual transition of mono drug therapy in conventional medicine in to multidrug therapy [2, 3]. There are many ways for obtaining chemical substances, most important ones is their presence in the nature or not. Chemicals can affect human life by a wide variety of ways some are essential like vitamins and mineral others are toxic like poisons [4]. Natural origin drugs play an important role in the drug discovering process, attempts are continue for finding a lead compounds for developing of synthetic drugs clinically active, as well as synthetic drugs also play an important role in the process of drug discovery [4-6]. Renal stone is a recurrent renal disease, that patient recur from first stone at high rates without any preventive risks, but the recurrence of one more stone formation after 3 year from the first stone is about 40% and the percentage increases with the time [7]. Urolithiasis is formation of urinary calculi in urinary tract considering as a most popular disease about 12% of world population expressed renal stone in higher percentage in male than female [8, 9, 10]. The proven effects and activities of herbs and herbal products, in addition to drawbacks from the over use of synthetic drugs increase the curiosity peoples for discovering drugs from nature with safer remedies. As other diseases there were many herbal remedies are employed for the management of urolithiasis [11]. Usually urolithiasis case will not treated, medications are prescribed for relieving the pain associated with the case, and the patient will be advised for vegetarian diet and increasing in the fluid intake. Chemical drugs (synthetic drugs) available for the management of urolithiasis are ineffective in all forms of patients with many adverse effects. The usage of an open renal surgery for management of urolithialsis where declined after introduction of Extracorporeal Shock Wave Lithotripsy (ESWL) which has almost become the standard procedure for eliminating kidney stones. Drawbacks recording with (ESWL) method of treatment were the traumatic effect of shockwaves, stone fragments residues and the possibility of infection suggests that ESWL may cause acute renal injury, a decrease in renal function and an increase in stone recurrence, fragments of stone may remain and cause serial microbial infection. For these reasons, continues efforts were spent on developing anti-lithiatic drug from natural origin

with fewer side effects [4, 12]. The way for management of diseases with medicines of more efficiency and less adverse effect is the phytotherapy [13]. However the complete mode of action of nature origin drugs (phytotherapeutic agents) are not well known, but plant based phytotherapeutic play an abundant role in the management of urolithiasis. Plant based drugs act in different stages of urolithiasis pathophysiology, unlike to the conventional drug which act in specific aspect. Their mode of action is a multiple mechanism example changing ion composition of the urine, exert diuretic effect or anti-lithiatic activity [14]. A great interest in phytotherapy and alternative therapies have been shown in recent years especially those drugs originated from plant. There were several reasons behind this great interest to plant derived drug, like inefficiency of synthetic conventional drugs, abusive of the drug, incorrect use result in side effect problems, difficult access to the conventional drugs in some areas in the world. Moreover, phytotherapeutic agents considered as harmless from folk medicine and ecological view [15, 16, 17, 18]. The objectives of the study were to classify the drugs available in the pharmacies in Hawler city, finding the priority of drug classes by the physicians with their corresponding reason behind of their preference of a selected class. Finally finding relation-ship between herbal remedies used by local herbalists and physician.

2. Methodology

Collection of drugs available in pharmacies in Hawler city used in urolithiatic cases management and classified in to three groups according to their origin (Chemical origin classified as chemical origin drugs (synthetic drug), plant origin classified as phytotherapeutic agents and combination of both groups. The comparative study among data collected from 40 urologist selected randomly in Hawler city by questionnaire have been done. The questionnaire include information about origin of drugs used by the physicians for kidney stone cases as helper for removing of stone or dissolving of the stone, the reasons behind of preferring to prescribe that origin of drug either low side effects, high efficacy and low prices (economic) or any other reasons specify by the physicians in section of other. Collection of herbal remedies used by local herbalists in kidney stone cases. The collected drugs available in the pharmacies (phytotherapeutic agents group) that have been prescribed by the urologists were compared with herbal remedies (crude plants) used by traditional herbalists and local healers in urolithiasis. The data were presented using Microsoft Excel 2007.

3. Results

Drugs have been collected from 40 pharmacies in Hawler city and classified in to the three groups, it found that (60%) belong to plant origin group (phytotherapeutic agent), (33%) belong to chemical origin group (synthetic drug) and (7%) belongs to combination group of available drugs in pharmacies (Figure 1). Data collected from questionnaire distributed among (40) urologist were analyzed to find that (47%) (Figure 2) of physicians were preferred to prescribe phytotherapeutic agent, (59%) of them because of its low side effect, (23%) because of high efficacy, (18%) because of economic view; there was no any other reasons specified by physicians for preferring plant origin drugs (Figure 3). (37%) (Figure 2) of physicians preferred to prescribe combination group of drugs, (54%) of them because of high efficacy, (38%) because of low side effect and (8%) because of economic view; there was no any other reasons specified by doctors for preferring combination (Figure 3). (16%) (Figure 2) of physicians preferred to prescribe chemical origin drugs, (67%) of them because of high efficacy, (33%) because of low side effect, and (0%) of the physicians who preferring synthetic drugs because of economic view and no any other reasons specified by the physicians (Figure 3). Herbal remedies (crude plant materials) used in the management of urolithiasis used by traditional herbalists and local healers are presented in (Table. 1)

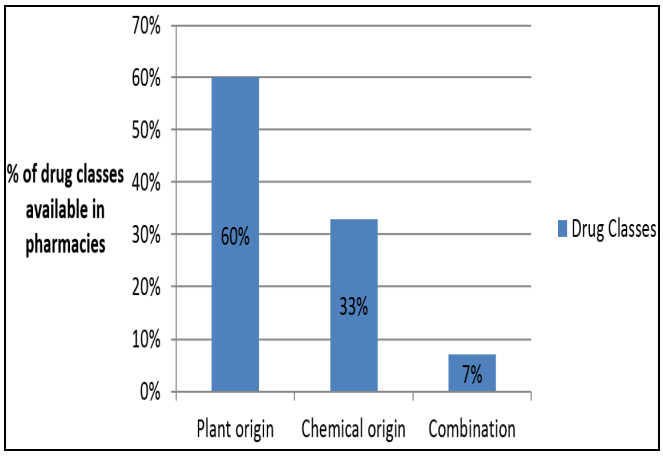

Fig 1: Illustrated percentage of drug classes available in pharmacies in Hawler city

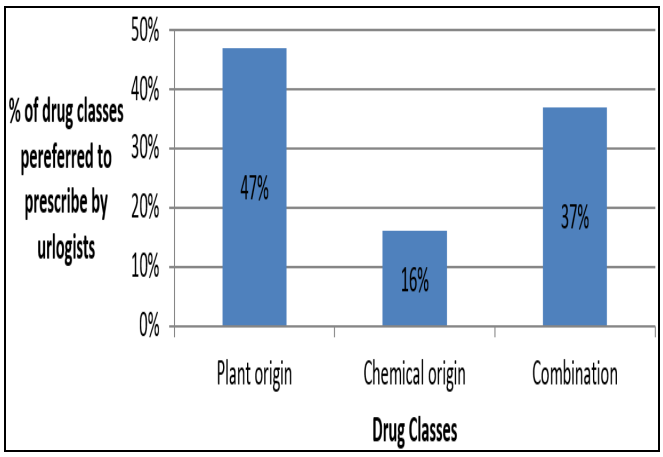

Fig 2: Illustrate percentage of drug classes to prescribe by urologist physicians

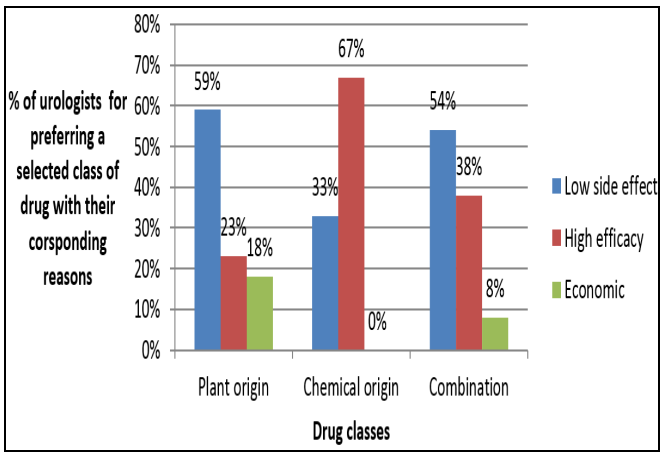

Fig 3: Illustrate percentage of drug classes preferred by urologists with their corresponding causes of preference for that class of drug.

Table1: Herbal remedies used by local herbalists in urolithiasis in Hawler city:

Botanical Name	Family	Common name of plant	Common name in Kurdish and Arabic	Part of plant used
Ammi visnaga	Apiaceae	Tooth picks	Khela[1, 2]	Seeds
Urtica dioica	Urticaceae	Stinging nettle	Gazgazok[1], Alqress[2]	Leaves and stem
Althea officinalis	Malvaceae	Marshmallow	GullaHero[1], Alxatmeea[2]	Flowers and leaves
Petroselinum crispum	Apiaceae	Parsley	Maadanos[1], Baqdons[2]	Leaves and stem
Zea mays	Poaceae	Corn	Ganmashamee[1], Tharra[2]	Corn silk
Nasturtium officinale	Cruciferae	Watercress	Kuzara[1], Rashad[2]	Whole herb

[1] refers to the Kurdish common name of the plant, [2] refers to the Arabic common name of the plant.

4. Discussion

Different properties of natural origin drugs participate in their effects on human being life either as nutrient or necessity for the health [4]. From drug collection process from pharmacies in Hawler city we found that most of the drugs available were originated from plant, mirror records by Eisenberg, 1998 that found phytotherapeutic agents were mostly available in pharmacies, followed by chemical origin drugs and in the third the combination preparation of both plant and chemical origin drugs. About 25% of prescribed drugs worldwide were plant origin [18], with over expectation of phytotheraputic agents sales in 2003 recorded by Patwardhan *et al.* 2004 [19], as a revolution of the nature over synthetic agents and there were no drug in conventional drug therapy can dissolve the stone, physicians depend almost on alternative medicines (phytotheraputic agents) [20], which were mostly prescribed by the urologists in Hawler city about 47%, a very close value of percentage of phytotheraputic agents prescription were recorded in Germany by Gruenwald 1997 [21] and Misra 1998 [22] [about 50% of phytotheraputic agents were sold on medical prescription], followed by the combination drugs and lastly the chemically manufactured drugs. In comparison of phytotheraputic agent with conventional drugs used in urolithiasis management from different points of view depending on perspectives of urologists, have been found that phytotheraputic agents are safer and more economic than that of synthetic drugs, their opinion were agreed by (Calixto 2000 [23], Rates 2001 [18], Merlin 2011 [24], Robinson 2011 [25], Anand *et al.* 2012 [26]), while the high efficacy of the synthetic drugs in corresponding to the efficacy of the plant origin drugs, since the plant efficacy depend on their phytochemical constituents and concentration and seldom researches done on their efficacy [20]. Combination drugs between the two controversy groups natural and synthetic drugs was found that were of low side effect mostly and more potent than the use of phytotheraputic agent alone, similar finding were recorded by Breinbauer *et al.* 2002 [27] & Aggarwal *et al.* 2014 [28]. Antiurolithiatic plants were used by traditional herbalists and local healers in Hawler city; are *Ammi visinaga*, *Urtica diocia*, *Althea officinalis*, *Petroselinum crispum* and *Zea mays*. Their usage as anti-urolithiatic drugs because of these corresponding activities from literatures *Ammi visinaga* was used for its potent diuretic activity and prevent renal epithelial damage [28, 29, 30, 31], *Urtica diocia* [29, 32], *Petroselinum crispum* [29, 33], *Zea mays* [29, 34, 35] and *Nasturtium officinale* [36, 37, 38, 39] were used for their diuretic effect, *Althea officinalis* [29, 40, 41, 42] was used for its anti-inflammatory and soothing effect. In comparison of herbs used by traditional herbalists with natural originated drug classes available in pharmacies prescribed by urologists in urolithiasis cases we found that *Ammi visinaga* plant were used by both traditional herbalists and urologist doctors, the effect of plant were document by Zulfaqar *et al.* 2001 [30], Vanachayangkul *et al.* 2010 [31].

5. Conclusion

In recent years there was a great passion toward the phytotherapy and alternative medicine for treatment and managing of variety of diseases over synthetic conventional drugs. From our survey on how much this interest of the world for the medicinal plants reflect on our society and perspectives of our physicians for managing of urolithiasis (the aliment with higher recurrent rates) we conclude that physicians opinion is that the nature plays an important role for developing and production of safer, more economic and effective drugs for the management of urolithiasis. Since, natural origin drugs were with greatest availability, safest drugs and most economic in the pharmacies in Hawler city, with higher medical prescription rates by the urologists followed by the combination group drugs, and the last group was the synthetic drug. In an attempt to find a relation between phytotherapy practicing by the traditional herbalists and local healers, and phytotheraputic agents prescribed by physicians, *Ammi visinaga* plant was a universal plant that prescribed by both the local herbalists in form of dried plant material preparation and urologists in form of packed herbal remedies available in pharmacies in Hawler city.

6. References

1. Eisenberg DM, Davis RB, Ettner SL. Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey. JAMA 1998; 280:1569-75
2. World health Organisation (WHO). Antiretroviral therapy for HIV infection in adults and adolescents Recommendations for a public health approach: revision, 2010.
3. Ho D. Time to hit HIV, early and hard. The New England journal of medicine 1995; 333(7):450-51.
4. Topliss JG, Clark AM, Ernst E, Hufford CD, Johnston GAR, Rimoldi JM *et al.* Natural and synthetic substance related to human health. Pure Appl. Chem 2002; 74(10):1957-85.
5. Norman RF, Olayiwola A, Audrey SB, Djaja DS, Zhengang G. Medicinal plants in therapy. Bull World Health Org 1985; 63:965.
6. Soejarto DD, Farnsworth NR. Tropical rain forest: potential source of new drug?. Perspect Biol. Med 1989; 32:244-56.
7. Leye A, Jaeger W, Robertson U, Unwin R. Renal stone disease. Medicine 2007; 35:415-9.
8. Hasrh M. Text book of pathophysiology. 6th edition. Deihi, Jaypee brothers publication, 2006.
9. Sundararajan P, Mahesh R, Ramesh T, Hajeena B. Effect of *Aerva lanata* on calcium oxalate urolithiasis. Indian journal of Asian Biology 2006; 24:981-6.
10. Hamid M, Mohammad MN, Ghanea L. Evaluation of the *Raphanus sativus* effect on urinary pH. Journal of Research in Medical Sciences 2007; 12(2):58.
11. Havagiray R, Shashi A, Jain SK, Sabharwal M. Herbal

treatment for urinary stones. Ijpsr 2010; 1:24-9.
12. Begun FP, Knoll CE, Gottlieb M, Lawson RK. Chronic effects of focused electrohydraulic shock waves on renal function and hypertension. J.Urol 1991; 145:635-9.
13. Prasad KVSRG, Sujatha D, Bharathi K. Herbal Drugs in Urolithiasis - A Review. Pharmacogn Rev 2007; 1(1):175-9.
14. Barry H. Antioxidant effects: A basis for drug selection. Drugs 1991; 42:569-605.
15. Goldfrank L. The Pernicious Panacea: Herbal Medicine. Hospital Physician 1982; 10:64-86.
16. Vulto AG, Smet PAGM. In: Dukes MMG (Ed.). Meyler's Side Effects of Drugs, 11th Ed. Elsevier, Amsterdam, 1988, 999-1005.
17. Mentz LA, Schenkel EP. A coereˆncia e a confiabilidade das indicac¸o˜es terapeˆuticas. Caderno de Farma´cia 1989; 5(1-2):93-119.
18. Rates SMK. Plants as a source of drugs (Review). Toxicon 2001; 39:603-13.
19. Patwrdhan B, Vaidya ADB, Chorghade M. Ayurveds and natural products drug discovery. Current science 2004; 86(6):789-99.
20. Galib BS, Behera K, Kar AC. Lithiotripic activity of swadamstradi kwatha seadamstradi chan Vati-an experimantal evaluation. JDRAS 2006; 27:8-18.
21. Gruenwald J. The herbal remedies market in the U.S, market development, consumer, legislation and organizations. Phytopharm. Consulting, Communiqué, 1997.
22. Misra R. Modern drug development from traditional medicinal plants using radiololigand receptor binding assays. Medicinal Research Reviews 1998; 18(6):383-402.
23. Calixto JB, Efficacy, safety, quality control, marketing and regulatory guidelines for herbal medicines (phytotherapeutic agents). Braz J Med Biol Res, 2000, 33(2).
24. Merlin LW, Bertrand G, Jacques F, Chiaka D, Sergio G, Drissa DW. A "reverse pharmacology" approach for developing an anti-malarial phytomedicine. Malaria Journal 2011; 10(1):8.
25. Robinson MR, Zhang X. The world medicines situation 2011 (Traditional medicines: global situation, issues and challenges). Geneva, WHO, 2011.
26. Anand T, Vivekk S, Vikkas L, Ashish BA, Deeptii BA, Sonali N. An overview on potent indigenous herbs for urinary tract infirmity: Urolithiasis. Asian Journal of Pharmaceutical and Clinical Research 2012; 5(1):0974-2441.
27. Breinbauer R, Vetter IR, Waldmann H. From protein domains to drug candidates-natural products as guiding principle in the design and synthesis of compound libraries. Angewandte Chemic (International Edition in English) 2002; 41(16):2879-90.
28. Aggarwal A, Singla SK, Tandon C. Urolithiasis: Phytotherapy as an adjunct therapy. Indian Journal of experimental biology 2014; 53:103-11.
29. Beth S, Sharol TND, Vicky CND, James RND, Lynn B. Urinary Tract Health. Herbal Transition 2000; 2(2).
30. Zulfaqar AK, Adel MA, Hani M, Al-Afghani A, Turki M, Maghrabi A. Inhibition of oxalate nephrolithiasis with *Ammi visinaga* (Al-Khillah). International Urology and Nephrology 2001; 33(4):605-8.
31. Vanachayangkul P, Byer K, Khan S, Butterweck V. An aqueous extract of Ammi visnaga fruits and its constituent's khellin and visnagin prevent cell damage caused by oxalate in renal epithelial cells. Phytomedicine 2010; 17(0):653-8.
32. Blumenthal M, Busse WR, Goldberg A. *The Complete German Commission E Monographs: Therapeutic Guide to Herbal Medicines*. Austin, TX: American Botanical Council, 1998, 216.
33. Leung YA. Encyclopedia of Common Natural Ingredients Used in Food, Drug and Cosmetics. John Wiley & Sons: New York, 1988, 257-9.
34. Prachi N, Chauhan D, Kumar MS. Medicinal plants of muzaffarnagar distinct used in treatment of urinary tract and kidney stone. Indian journal of traditional knowledge 2009; 8(2):191-5.
35. Vivekkumar DR, Pankaj F, Dhananjay S, Kshirsagar SN. Int. J. Pharm. Sci. Rev. Res 2013; 21(2):16-9.
36. Ozen T. Investigation of antioxidant properties of *Nasturtium officinale* (watercress) leaf extracts. Acta Polon Pharm- Drug Res 2009; 66:187-93.
37. Palaniswamy UR, McAvoy RJ, Bible BB, Stuart JD. Ontogenic variations of ascorbic acid and phenathyl isothiocyanate concentration in watercress (*Nasturtium officinale* R. Br) leaves. J Agric Food Chem 2003; 51:5504-9.
38. Chen L, Mohr SN, Yang CS. Decrease of plasma and urinary oxidative metabolites of acetaminophen after consumption of watercress by human volunteers. Clin Pharm Ther 1996; 60:651-60.
39. Mozaffarian V. A Dictionary of Iranian Plant Names. Tehran, Farhang Moaser Publication, 1996, 422.
40. Mascolo N, Autore G, Capasso F, Menghini A, Fasulo MP. Biological screening of Italian medicinal plants for anti-inflammatory activity. Phytother Res 1987; 1(1):28-31.
41. Novaretti R, Lemordant D. Plants in the traditional medicine of the Ubaye valley. J Ethnopharmacol 1990; 30(1):1-34.
42. Gruenwald J. PDR for herbal medicines 2nd edition. Montrace NJ, Medical Economics, 2000.