

Review Article**Intestinal Ulcer: Review of Diagnosis and Treatment in Persian Medicine****Zahra Moradi^{*}, Mehdi Besharat², Zahra Ghorbanifar¹, Zohreh Parsa-Yekta³, Mohammad Reza Masroorchehr¹**¹Department of Traditional Medicine, School of Traditional Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran²Department of Infectious Diseases, Loqman-e-Hakim Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran³School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, IR Iran***Corresponding author**

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Abstract: Intestinal ulcers are common diseases that have different causes. Inflammatory bowel disease (IBD) as an important cause of intestinal ulcer (IU) is a chronic condition without a medical cure and commonly requires a lifetime of care and medication. The lack of effective standard therapies and potential adverse events has been led to increase the use of complementary and alternative medicines (CAM) for treating IBD. Etiologies and treatments of IU, which is called “*sahj*” have discussed in traditional Persian medicine (TPM). Releasing abnormal humors are the most important etiologies of IU and eradication of the major causes of the disease is the main therapeutic strategy. There are different natural remedies for the treatment of intestinal ulcer in TPM that efficacy and mechanisms of action for some of these remedies have been investigated. The aim of this study is to review the etiologies, symptoms, and therapeutic methods for intestinal ulcer according to Persian medicine to clarify the different aspects of this disease.**Keywords:** Intestinal ulcer, Inflammatory Bowel disease, Therapeutics, Etiology, Traditional medicine.

INTRODUCTION

Intestinal ulcers are common diseases that have different causes, such as infection [1], drugs [2], diet [3, 4], and inflammatory bowel disease (IBD) [5]. Among them, IBD is important disease with unclear etiology, includes two chronic diseases, Crohn's disease (CD) and Ulcerative colitis (UC). Ulcerative colitis involves the mucosa of the colon and rectum [6]. But Crohn's disease can affect any part of the gastrointestinal tract [7]. IBD symptoms depend on the segment of the intestinal tract involved. In general, symptoms include abdominal cramps and pain, diarrhea, and secretion of mucosa and bloody stool [5]. The etiology of IBD is unclear but the most accepted hypothesis implicates combination of some factors such as immune dysregulation, abnormal gastrointestinal (GI) luminal factors, oxidative stress, and defects in the GI mucosal barrier [8]. Current medical therapy for IBD includes some drugs such as aminosalicylates, corticosteroids, anti-tumor necrosis factor alpha drugs, antibiotics, probiotics, phosphodiesterase inhibitors, and immunosuppressive agents [9]. However, it should be noted that the serious adverse effects of them have been led to decreased compliance of the patients [10, 11].

In recent years, patients with IBD are increasingly using complementary and alternative medicine (CAM). Hence, researchers are working on

CAM to find remedies, which induce the remission of symptoms with better safety and tolerability [12]. There are many medicinal plants, used worldwide for the treatment of IBD which their mechanisms of action and efficacy have been investigated [12-14]. On the other hand, there are many plants in traditional Persian medicine (TPM) that were historically used for the management of intestinal ulcer (IU). Action mechanisms of some of these plants have been found [8]. Also, Clinical benefit of *Satureja khuzestanica* (Iranian herb) in ulcerative colitis evaluated by Rastegarpanah *et al.* [15] and the effect of *Zataria multiflora Boiss* (*Avishan shirazi*) on prevention and treatment of experimental IBD, examined by Ashtaral Nakhai *et al.* [16].

Historically, medical science are transmitted from past generations to the present ones but the role of the earliest cultures such as Egyptians, Greek, Persian, Indian, and Chinese in forming the nucleus of medicine is very important [17]. TPM is an ancient temperamental medicine, which has a history of several thousand years [18]. In TPM, temperament (*mizaj*) is made of the interaction of opposite primary qualities (hot, cold, wet, and dry). In other words, the dominant quality of the compound object means temperament. Imbalanced healthy temperament which is known as dystemperament leads to several types of diseases [19]

such as bowel diseases. The principle of treatment in any disease according to TPM is elimination of its main causes and modifying the six essentials of healthy life [18, 20]. These essentials include air, food and drink, sleep and wakefulness, body movement and stillness, retention and evacuation, and perturbations of mind [21, 22]. In this viewpoint, accurate information about the causes of illness and appropriate diet for each patient is essential. The aim of this study is to review the etiologies, symptoms, and therapeutic methods for IU according to TPM to clarify the different aspects of this disease.

MATERIALS AND METHODS

In this review study, we studied printed editions of some available most prominent books of TPM in Arabic or Persian language. They include Canon of Medicine (Avicenna, 10th and 11th centuries), Zakhire-ye-Kharazmshahi (Jorjani, 12th century), MoalejatAghili (Aghili, 18th century), and Exir-e-Azam (Chishti, 19th century). These books are among the most important clinical resources and have widely been taught in traditional Persian medicine schools.

Inclusion criteria of selected medical resources:

- Select books from different centuries.
- The validity of the author
- Available books contain systematic bowel diseases chapter

Exclusion criteria of selected medical resources:

- Invalid author
- Books contain unsystematic bowel diseases chapter

We have used all books in their original language (Canon of Medicine in Arabic and other books in Persian). At first, we studied each book based on chapter on intestinal diseases. Then, we collected issues about IU which is called “*sahj*” in TPM. We classified results based on the causes and symptoms, then mentioned treatment strategies based on each cause. To find the scientific names of plants we took advantage of botany reference book [23] and articles. For more data collection about IU in TPM, databases include Web of Science, Scopus, SID, and Iranmedex were searched during 2005 to late 2014. The searched terms were “*sahj*”, “intestinal ulcer”, “bowel ulcer”, “inflammatory bowel disease”, and “IBD” by narrowing and limiting in “traditional Persian medicine” and “traditional Iranian medicine”.

RESULTS

To further understand the pathophysiology of “*sahj*”, intestinal anatomy and humor was briefly discussed as following:

Intestinal anatomy in TPM

Bowels are excretory organs with two layers and include six parts. Upper bowels are thin with inner mucoid surface, named as “*asnaashari*” (duodenum), “*saem*” (jejunum) and “*deghagh*” (ileum). Lower bowels need resistance to stools, so they are thick and firm with internal fat included: “*aevar*” (appendix), “colon” and “direct intestine” (rectum)[24].

Humor in TPM

“*khelt*” which is called “humor”, is a wet and fluid substance that food in the first stage of permutaion, changes to it. Normally, the human body has four humors: blood or “*dam*”, phlegm or “*balgham*”, yellow bile or “*saфра*” and black bile or “*sauda*” [19].

“Sahj” definition in TPM

The innermost layer of the intestines is the mucosa. This mucous membrane lubricates the interior of the intestines to prevent injury from humor passing through the lumen. Abnormal humors can damage mucosa and it causes to “*sahj*”. So “*Sahj*” is defined as intestinal pain because of injured bowel mucosal layer[25-27]. “*Sahj*” is defined as intestinal pain because of injured bowel mucosal layer [24] followed by secretion of mucosa and bloody diarrhea[24-27].

Jurjani has believed that painful “*sahj*” in direct intestine (rectum) is “*zahir*” [25]. However, some physicians have described “*zahir*” as a severe rectum pain that can result in retention stool and followed by secretion of mucosa and blood (27). Many causes, symptoms, and treatments of “*zahir*” are similar to “*sahj*” [26, 27].

“Sahj” etiology in TPM

TPM physicians have expressed causes of “*sahj*” as follows:

- Releasing abnormal yellow bile into the intestine. Hot and bitter bile can injure intestinal mucosal layer [24-27].
- Releasing abnormal phlegm into the intestine. Salty (*Buriqi-maleh*) phlegm and viscous phlegm are two kinds of abnormal phlegm cause “*sahj*” [24-27].
- Releasing abnormal black bile into the intestine. Burned black bile (a kind of abnormal black bile) irritates the intestine and cause “*sahj*” [24-27].
- Dry stool. Movement of very dry stool through the intestine injures mucosal layer [24, 26, 27].
- Ingestion of toxic substances such as arsenic and “*noshador*” (*Ammonium chloride*) [26, 27].
- Laxatives [24-27].
- Releasing biting humor into the intestine from other organs [24, 26].

“Sahj” symptoms in TPM

Diagnosis of intestinal “sahj” has three steps [26]. Step 1 is recognition of general symptoms including abdominal cramps, thirst, secretion of mucosa and blood with stool. Step 2 is finding site of intestinal involvement (upper or lower bowels).

Specific symptoms of upper intestinal “sahj”:

- Sever peri-umbilical and upper umbilical pain
- Thirst
- Intense mixing of mucosa and blood with stool
- No fat in the stool
- Reduction of retention time of drugs in intestinal system

- Dysphoria

Specific symptoms of lower intestinal “sahj”:

- Lower umbilical pain
- Secretion of mucosa and blood before or after of evacuation of stool, or mild mixing of mucosa and blood with stool
- Fatty stool in rectal involvement

Step 3 is finding the causes of intestinal “sahj”. Specific symptoms of the different causes are mentioned in Table 1 [25-27].

Table1: Specific symptoms of intestinal “sahj” according to TPM

Cause	Symptom
Releasing abnormal yellow bile	Diarrhea due to yellow bile before the disease for 1 week Secretion of yellow bile with stool Severe abdominal pain Thirst Yellow stool Anal irritation
Releasing abnormal phlegm	Diarrhea due to phlegm before the disease Secretion of phlegm with stool Abdominal pain with feeling of heaviness Abdominal bloating and borborygmi Incidence after long “zokam” and “nazleh” (flow of material through the nose or into the throat [28]).
Releasing abnormal black bile	Diarrhea due to black bile before the disease Permanent abdominal cramping Sever dysphoria Secretion of black bile with stool Black stool Sometimes fainting after sever pain Presence of mentioned symptoms at beginning of the disease is sign of cancer and it is fatal
Dry stool	Consumption of dry and astringent food before the disease Constipation Dry fecal excretion along with pain
Ingestion of toxic substances	toxic substances usage before the disease
Laxatives	Laxatives usage before the disease

“Sahj” treatments in TPM

Treatment includes general and specific stages. The general therapeutic stages [24-26] are presented below.

- The main therapeutic strategy is eradication of the major causes of the disease. If the cause of “sahj” is abnormal humor, it’s necessary to know that humor secretion continues or not. If it continues, depending on conditions, retention or evacuation of humor is necessary.
- Within the first two days of illness, eating food would be avoided, if possible. If need to eating food, cooked milk with hot stone is the best.
- The best food recommended for patients is nutritious food with low volume like soft-

boiled egg yolk, fatty chicken liver, and fruit paste.

- Oral medicines and rectal enema are used in upper and lower intestinal “sahj”, respectively. In the case of middle intestinal “sahj”, both of these treatments (oral medicines and rectal enema) are employed.
- Attention to Strengthening four important organs brain, heart, liver, and stomach.
- Slimy Substances which are called “mogharriat” are the base of treatment.
- Eating “Rivand-e-chini” (*Rheum palmatum* L[23] mixed with water of “kasni”(*Cichorium intybus* L [29] or sour apple juice is useful.

The specific therapeutic stages are different based on the cause of “*Sahj*”. TPM physicians have used many natural remedies for different kinds of “*sahj*” [24, 26, 27]. Some of these remedies and their corresponded stage, which are common to TPM books (mentioned in Section 2), are presented as follows:

- Therapeutic stages of “*Sahj*” caused by releasing abnormal yellow bile into the intestine:

At first, purgation and Strengthening of brain is necessary if the source of “*sahj*” is in brain. Then, prevention of releasing of abnormal yellow bile by potage with pomegranate or verjuice which is called “*rommaniiah*” or “*hesramiiah*” and pomegranate, apple, and quince paste is necessary. After eradication of the cause, usage of glace seeds and “*mogharriat*” has been recommended. Some of these remedies are seed of *Plantago opsyllum* L [23] called “*esfarzah*”, *Plantago major* [23, 30] called “*barhang*”, *Acacia senegal* [30] called “*Samgh-e arabi*”, and *Armenian soil* called “*gel-e-armani*”. Also, “*Magliasa*” is a traditional Iranian formula that has been used to treat “*sahj*”. Efficacy of “*Magliasa*” has been investigated by Rahimi et al. on experimental colitis [31].

- Therapeutic stages of “*Sahj*” caused by releasing abnormal phlegm into the intestine:

At first, retention or evacuation of phlegm should be done. A beneficial formula for evacuation of phlegm is water of cooked black fruit of *Terminalia chebula* (*T. chebula*) known as “*halilesiah*”, dried grapes with seed known as “*maviz*”, and fruit from *Cassia fistula* [23, 32] known as “*flous*”. Treatment of “*sahj*” is recommended by laxative seeds such as seed isolated from *Ocimum basilicum* L [23] (*tokhm-e-reyhan*), *Plantago major* (*barhang*), and *Plantago psyllium* L (*esfarzah*). Also, effective formulas are “*Magliasa*” and combination of fried black fruit of *Terminalia chebula* (*halilesiah*) with sugar. Appropriate food choices are chicken, rabbit, sparrow, and black partridge meat with *Cuminum cyminum* [23, 33] (*zire-e sabz*), *Carum carvi* [23, 33] (*zire-e siyāh*), and *Pimpinella anisum* [33] (*anisoon*).

- Therapeutic stages of “*Sahj*” caused by releasing abnormal black bile into the intestine:

First step of treatment is retention of releasing abnormal black bile. The second is strengthening the spleen and prevention causes of black bile production such as sour and salty foods, tea, coffee, lentils, cabbage, and eggplant. Third step is treatment of “*sahj*”. “*Safoof-e-tin*” is a useful traditional Persian formula, recommended by Jurjani, includes *Armenian soil*, *Bambosa arundinaceae* [34] (*tabasheer*), *Arabic gum*, *Myrtus communis* [23, 30] (*moord*), *Daemonorops draco* Blume [23] (*damolakhavain*), and *Boswellia carterii* [23, 33] (*Kondor*).

- Therapeutic stages of “*Sahj*” caused by dry stool:

Natural mucilage which is mild laxative and effective to “*sahj*” is recommended, such as seed of *Cydonia oblonga* Mill [23] (*beh*), *Plantago psyllium*, *Althaea officinalis* [30] (*khatmi*), *Cassia fistula* (*flous*). Other recommended laxatives are *Viola odorata* L [23] (*banafsheh*) syrup and *Amygdolus communis* L [23] (*badam*) oil.

- Therapeutic stages of “*Sahj*” caused by eating toxic substances:

Stomach evacuation by vomiting is recommended. Then appropriate food choices to treat “*sahj*” are fresh milk and traditional Iranian Soup known as “*harirah*” which made with starch, milk, sugar, and *tokhm-e-reyhan* (*Ocimum basilicum*). The other useful remedies are *safoof-e-tin* and *magliasa*.

- Therapeutic stages of “*Sahj*” caused by laxatives:

“*Doogh*” is a traditional yogurt-based beverage. Sour *doogh* heated by hot iron is the best remedy for this kind of “*sahj*”. It can eat with cooked rice. *Safoof-e-tin* and *magliasa* are useful, too.

Herbal medicines used in TPM for the treatment of IU are tabulated in Table 2.

Table-2: Plants used in intestinal ulcer (*sahj*) according to traditional Persian medicine

Traditional Persian name	Scientific name	Kind of “ <i>sahj</i> ”	Part used in traditional
Rivand-e-chini	<i>Rheum palmatum L</i>	All typs	Root, Rhizome
Kasni	<i>Cichorium intybus L</i>	All typs	Herb
Esfarzah	<i>Plantago psyllium</i>	yellow bile and phlegm	Seed
Barhang	<i>Plantago major</i>	yellow bile and phlegm	Seed
Samgh-e arabi	<i>Acacia senegal</i>	yellow bile	Gum
Halilesiah	<i>Terminalia chebula</i>	phlegm	Fruit
Flous	<i>Cassia fistula</i>	phlegm and dry stool	Fruit
Tokhm-e-reyhan	<i>Ocimum basilicum L</i>	phlegm and eating toxic substances	Seed
Kamoon (zire-e sabz)	<i>Cuminum cyminum</i>	phlegm	Fruit
Karvia (Zire-e siyah)	<i>Carum carvi</i>	phlegm	Fruit
Anisoon	<i>Pimpinella anisum</i>	phlegm	Fruit
Tabasheer	<i>Bambosa arundinaceae</i>	black bile	Secretions
Moord	<i>Myrtus communis</i>	black bile	Leaf
Damolakhavain	<i>Daemonorops draco</i> Blume	black bile	Resin
Kondor	<i>Boswellia carterii</i>	black bile	Gum
Beh	<i>Cydonia oblonga Mill</i>	dry stool	Seed
Khatmi	<i>Althaea officinalis</i>	dry stool	Flower, Seed
Banafsheh	<i>Viola odorata L</i>	dry stool	Flower
Badam	<i>Amydolus communis L</i>	dry stool	Fruit

CONCLUSION

In this study, we collected etiologies, symptoms, and treatments of intestinal ulcer which have mentioned in some of main texts of TPM, for the first time. Our findings show that great traditional Persian physicians to management of intestinal ulcer have paid attention to the patient's diet. In recent years the influence of diet on IBD, as a cause of intestinal ulcer, is considered [35, 36]. It seems that seeking traditional resources, such as TPM to find dietary guidance for intestinal ulcer is useful. TPM physicians have used many natural remedies to treat intestinal ulcer, too. According to investigated efficacy and mechanisms of action for some of these remedies [8, 15, 16], they can hopefully still open up new, non-invasive therapies for the applied treatments. The most important point of view of TPM physicians is eradication of the major causes of the sickness that is necessary to complete treatment of intestinal ulcer. However, TPM is a temperamental medicine with specific structure which is not completely comparable to other traditional medicine schools or modern medicine. But attention to mentioned etiologies and treatments can still be of great importance for better diagnosis and treatment of patients and completing modern medicine deficiencies. In order to confirm the benefits of these remedies, clinical studies should be performed. We hope that this study stimulate some readers to look at this issue from different perspectives.

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REFERENCES

- Schöttker B, Adamu MA, Weck MN, Brenner H; *Helicobacter pylori* infection is strongly associated with gastric and duodenal ulcers in a large prospective study. Clin Gastroenterol Hepatol., 2012;10(5):487-493.e1.
- Scarpignato C, Hunt RH; Nonsteroidal antiinflammatory drug-related injury to the gastrointestinal tract: Clinical Picture, pathogenesis, and prevention. Gastroenterol Clin North Am., 2010;39(3): 433-464.
- Tovey FI; Staple diets and duodenal ulcer prevalence. Int Health, 2009; 1(2): 124-132.
- Misciagna G, Cisternino AM, Freudenheim J; Diet and duodenal ulcer. Dig Liver Dis., 2000; 32(6): 468-472.
- Bernstein CN, Fried M, Krabshuis JH, Cohen H, Eliakim R, Fedail S *et al.*; World Gastroenterology Organization Practice Guidelines for the Diagnosis and Management of IBD in 2010. Inflamm Bowel Dis., 2010;16(1): 112-124.
- Mehrabani D, Ziaei M, Hosseini SV, Ghahramani L, Bananzadeh AM, Ashraf MJ *et al.*; The effect of calendula officinalis in therapy of acetic acid induced ulcerative colitis in dog as an animal model. Iran Red Crescent Med J., 2011; 13(12): 884-890.
- Nikfar S, Ehteshami-Afshar S, Abdollahi M; Is Certolizumab pegol safe and effective in the treatment of patients with moderate to severe Crohn's disease? A meta-analysis of controlled

- clinical trials. Iran Red Crescent Med J., 2013;15(8): 668–675.
8. Rahimi R, Shams-Ardekani MR, Abdollahi M; A review of the efficacy of traditional Iranian medicine for inflammatory bowel disease. World J Gastroenterol., 2010; 16(36): 4504-4514.
 9. Mozaffari S, Nikfar S, Abdolghaffari AH, Abdollahi M; New biologic therapeutics for ulcerative colitis and Crohn's disease. Expert Opin Biol Ther., 2014; 14(5): 583-600.
 10. Stallmach A, Hagel S, Bruns T; Adverse effects of biologics used for treating IBD. Best Pract Res Clin Gastroenterol., 2010; 24(2):167-182.
 11. Rahimi R, Nikfar S, Rezaie A, Abdollahi M; Pregnancy outcome in women with inflammatory bowel disease following exposure to 5-aminosalicylic acid drugs: A meta-analysis. Reprod Toxicol., 2008; 25(2): 271-275.
 12. Ng SC, Lam YT, Tsoi KKF, Chan FKL, Sung JY, Wu JCY; Systematic review: the efficacy of herbal therapy in inflammatory bowel disease. Aliment Pharmacol Ther., 2013; 38(8): 854-863.
 13. Rahimi R, Mozaffari S, Abdollahi M; On the use of herbal medicines in management of inflammatory bowel diseases: A systematic review of animal and human studies. Dig Dis Sci., 2009; 54(3): 471-480.
 14. Rahimi R, Nikfar S, Abdollahi M; Induction of clinical response and remission of inflammatory bowel disease by use of herbal medicines: a meta-analysis. World J Gastroenterol., 2013;19(34): 5738-5749.
 15. Rastegarpanah M, Omidzohour N, Vahedi H, Malekzadeh R, Hashemian F, Safarnavadeh T *et al.*; Management of human ulcerative colitis by satorex™: A randomized controlled trial. International Journal of Pharmacology, 2011;7(4): 516-521.
 16. Nakhai LA, Mohammadirad A, Yasa N, Minaie B, Nikfar S, Ghazanfari G *et al.*; Benefits of *Zataria multiflora* Boiss in experimental model of mouse inflammatory bowel disease. Evidence-Based Complementary and Alternative Medicine, 2007; 4(1): 43-50.
 17. Ghorbanifar Z, Kasmaei HD, Minaei B, Rezaeizadeh H, Zayeri F; Types of nasal delivery drugs and medications in Iranian traditional medicine to treatment of headache. Iran Red Crescent Med J., 2014;16(6): :e15935.
 18. Feyzabadi Z, Jafari F, Feizabadi PS, Ashayeri H, Esfahani MM, Aval SB; Insomnia in Iranian traditional medicine. Iran Red Crescent Med J., 2014; 16(3): e15981.
 19. Emtiazy M, Keshavarz M, Khodadoost M, Kamalinejad M, Gooshahgir S, Shahrad Bajestani H *et al.*; Relation between body humors and hypercholesterolemia: An Iranian traditional medicine perspective based on the teaching of Avicenna. Iran Red Crescent Med J., 2012; 14(3): 133–138.
 20. Hamed SH, Jokar A, Abbasian A; Viewpoints of Iranian Traditional Medicine (ITM) about etiology of constipation. J Gastroint Dig Syst S., 2012; S8:005
 21. Soltani SS, Minaii B, Besharat M; Sleep and wakefulness correction in different seasons from Avicenna's perspective. Iran Red Crescent Med J., 2013; 15(3): 276–277.
 22. Golzari SE, Khodadoust K, Alakbarli F, Ghabili K, Islambulchilar Z, Shoja MM *et al.*; Sleep paralysis in medieval Persia - the Hidayat of Akhawayni (?-983 AD). Neuropsychiatr Dis Treat., 2012; 8: 229–234. .
 23. Mirheydar H; Maaref giyahi. Tehran, Iran: nashre farhang eslami; 2001.
 24. Avicenna H; The Canon in Medicine. 19th edition, Volume 3, Institute of Al-A'lami Li Al-Matboat, Beirut, 2005.
 25. Jurjani E; Zakhire Kharazmshahi. Bonyade Farhang-e Iran Publisher, Tehran, 1976.
 26. Azam Khan M; Exir-e-Azam. 2nd edition, Institute of History of Medicine and Complementary Medicine, Tehran, 2005.
 27. Aqili M; Aqili's cures. Iran University of Medical Sciences, Tehran, 2008.
 28. Homayoon Elahi MRM, Nemati S, Kamalinejad M, Besharat M, Hajimehdipoor H, Jalessi M; Historical applications of *Nigella sativa* L. (Black cumin) in the treatment of Zokam and Nazleh in Persian Medicine. Research on History of Medicine, 2014; 3(1): 11-20.
 29. Mohammadi Q, Minae MB, Somi MH, Mosaddegh M, Kamalinejad M; Novel use of chicory for the treatment of hiccups in liver obstruction: In Iranian traditional medicine. Iran Red Crescent Med J., 2013; 15(11): e6647.
 30. Nabati F, Mojab F, Habibi-Rezaei M, Bagherzadeh K, Amanlou M, Yousefi B; Large scale screening of commonly used Iranian traditional medicinal plants against urease activity. DARU, Journal of Pharmaceutical Sciences, 2012;20(1).
 31. Rahimi R, Baghaei A, Baeeri M, Amin G, Shams-Ardekani MR, Khanavi M *et al.*; Promising effect of Magliasa, a traditional Iranian formula, on experimental colitis on the basis of biochemical and cellular findings. World Journal of Gastroenterology, 2013;19(12):1901-1911.
 32. Mozaffarpur SA, Naseri M, Esmailidooki MR, Kamalinejad M, Bijani A; The effect of

- cassia fistula emulsion on pediatric functional constipation in comparison with mineral oil: A randomized, clinical trial. *DARU, Journal of Pharmaceutical Sciences*, 2012; 20(1): 72.
33. Ardekani MRS, Rahimi R, Javadi B, Abdi L, Khanavi M; Relationship between temperaments of medicinal plants and their major chemical compounds. *Journal of Traditional Chinese Medicine*, 2011; 31(1): 27-31.
 34. Dabaghian F, Kamalinejad M, Shojaei A, Abdollahi Fard M; Presenting anti-diabetic plants in Iranian traditional medicine. *Journal of Diabetes and Endocrinology*, 2012; 3(5): 70-76.
 35. Kanai T, Matsuoka K, Naganuma M, Hayashi A, Hisamatsu T; Diet, microbiota, and inflammatory bowel disease: Lessons from Japanese foods. *Korean Journal of Internal Medicine*, 2014; 29(4): 409-415.
 36. Hou JK, Lee D, Lewis J; Diet and inflammatory bowel disease: Review of patient-targeted recommendations. *Clin Gastroenterol Hepatol.*, 2014;12(10):1592-1600.