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Traditional Medicine

Holistic Approach to Functional Constipation: Perspective of Traditional Persian Medicine

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ABSTRACT Traditional Persian medicine (TPM) proposes a different viewpoint to the chronic diseases. Diagnosis and implemented treatment are based on individual differences among patients. Constipation or Ea'teghal-e-batn is a condition in which the patient develops difficult or painful defecation. Based on TPM concepts, the first digestion step starts from halq (oral cavity), and ends via defecation from the maq'ad (anus). Avicenna believed that four faculties, ha'zemeh (digestive), ja'zebeh (absorptive), ma'sekeh (retentive) and da'fe'eh (propulsive), are involved in the process of digestion and absorption of the ingested food and expelling the waste materials. The bowel movement and appearance of the stool is a measure for evaluating the gastrointestinal healthy function. Defecation should be with no pain and fecal material should have no burning and acuity. Low food intake or foods with dry temperament, dryness of gastrointestinal tract, diaphoresis and heavy exercise as well as intestine sensory loss were discussed as main causes of constipation. Management of constipation in TPM includes dietary schemes, oil massages and subsequently simple herbal medicines. According to TPM theories, the first step in treating a disease is the elimination of disease causes (asbab-e-maraz) and also providing the causes of health (asbab-e-sehhat). Health care providers should know the proper condition which the herbal medicines should be administered in and be able to guide the patients about the benefits and hazards of herbal remedies, commonly used in their living origin.

KEYWORDS constipation, Ea'teghal-e-batn, herbal medicine, traditional Persian medicine

By searching through the literatures, numerous recommended medications could be found for the symptomatic alleviation of constipation. However, no definite cure is outlined for this disorder. Considered as a holistic medicine, traditional Persian medicine (TPM) proposes a different viewpoint to chronic diseases. In TPM approach, patients are not meant to be treated with drugs in the first step. Diagnosis and implemented treatment are based on individual differences among the patients. Avicenna describes teb (medicine) as a tool for health maintenance in healthy individuals and also restoring the health in ill individuals. According to the TPM resources, six essential schemes, including air, foods and beverages, physical activities and rest, sleeping and awakening, retention and release as well as mental states are defined as frontiers of any medical intervention. In The Canon of Medicine (al-Qānūn fī al-Tibb), Avicenna mentioned that a disease should be treated with opposite schemes and health should be maintained with similar schemes. Prescribed drugs should be selected qualitatively opposite to the mezaj (temperament) of disease and quantitatively according to ten variables, including the nature of the affected organ, intensity of disease, sex, age, habit, season, place of living, occupation, stamina, and physical appearance. According to the Avicenna's theory on natures, organ nature is determined from the mezaj in tetrad conditions, congenital status, location, and organ stamina. Mezaj or temperament of an organ is determined according to the four qualities (warmness-coldness, dampness-dryness) which may be healthy or pathologic.[1]

Constipation or Ea'teghal-e-batn is a condition in which the patient develops difficult or painful defecation. Management of constipation begins with the patients' individualization regarding ten variables recommended by TPM resources. Subsequently, lifestyle changes, prescription of simple herbal as well as compound herbal medications would be considered. Drugs used in conventional medicine may

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be synthetic or natural. About 25% of pharmaceutical medicaments have been originated from botanical sources. Aspirin from willow bark, colchicines from meadow saffron and digoxin derived from foxglove are some commonly used medicines originated from herbal sources. Patients are usually unaware of the basics of TPM and think that herbal remedies and manual therapies such as massage and cupping have similar concepts in TPM. Many patients think that herbal remedies are safe and they are unaware of the risks of using these medicines without any consult.[2]

Current paper attempted to compile the TPM approaches to the management of constipation regarding safety and considerations of conventional medicine as well as using herbal remedies. To collect the TPM concepts and findings, we studied the most famous textbook and medical encyclopedia from 11th century, including The Canon of Medicine by Avicenna as well as Al-Mansoori Fi-al-Tib by Rhazes, Kamel-ol-Sanayeh-at-Tebbieh by Majoosi Ahwazi, Zakhireye Kharazmshahi by Jorjani, and Ikhtiyarat Badiee by Ansari Shirazi. Respective data were then discussed and compared with those of the contemporary medicine concepts.

Physiology of Bowel Habits

Digestion begins with mastication of the food in the oral cavity. Lubrication of food with saliva and formation of food bolus help the process of swallowing and transfer the food to the stomach for further digestion.[3] After meals, both tonic and phasic motor activity of the colon would be increased. High-amplitude propagated contractions generally occur after meal and shortly after awakening. It usually accompanied by an urge for defecation. However, the low amplitude propagated contractions can also induce the migration of colonic contents and consequently urge for defecation. In healthy people, appropriate expulsion forces synchronize with relaxation of the puborectalis muscles and external anal sphincter to produce a normal bowel movement.[4] High calorie intake foods significantly promote the high-amplitude propagated contractions in healthy individuals.[5]

Based on TPM concepts, the first digestion step starts from halq (oral cavity), and ends via defecation from the maq'ad (anus). The nomenclature and classification of related organs are somehow different from those of conventional medicine. Following oral mastication, food enters into the meri (esophagus) and subsequently passes to the fam-e-me'edeh (cardia) and qa'er-e-me'edeh (stomach). The am'â'e (intestines), are divided into six parts. Three upper parts are equivalent to the small intestines and include essna-ashar (duodenum), sa'em (jejunum) and deqaq (ileum). The first part of the large intestine consists of a'evar (cecum), qolon (colon) and finally, mostaqim (rectum) which terminates with dobor (anus) and sharaj (external anal sphincter).[6,7]

Avicenna believed that four faculties are involved in the process of digestion and absorption of the ingested food and expelling the waste materials. These faculties comprise ha'zemeh (digestive), ja'zebeh (absorptive), ma'sekeh (retentive) and da'fe'eh (propulsive). Ha'zemeh helps the digestion of the ingested food. Ja'zebeh contributes in the absorption of the digested food. Ma'sekeh helps ha'zemeh and ja'zebeh by keeping the ingested food in the upper gastrointestinal tract, as long as finishing the process of digestion and absorption. Da'fe'eh is a faculty that repels the waste material of digestion. All of these faculties need an average heat to be competent in their function. Furthermore, ha'zemeh needs wetness for digestion, ma'sekeh needs coldness for keeping the food for a while and da'fe'eh needs dryness to expel the waste matters. Constipation is usually the result of strong ma'sekeh and weak da'fe'eh.[1,7]

If the nature and consequently four faculties work normally, the process of food digestion would be in a healthy state. The food digestion and absorption have four steps. In the first step, hazm-e-me'edi (gastrointestinal, GI), the chylous produces in the stomach and subsequently enters into the intestines. The thin part of the chylous would be absorbed from massariqa (mesenteric veins) to the hazm-e-kabedi (liver). The second step of digestion is in the liver and the waste parts excrete into the urine. In the liver, four humors (sanguine, phlegm, bile and black bile) are produced and enter into the circulation. The third step of digestion performs in the hazm-e-orooqi (vessels), and the last step takes place in the organs. Sweat, sputum, nasal discharge, ear wax and semen were mentioned as wastes of the third and fourth step and beraz (feces) as the waste of the first digestion step. The bowel movement and appearance of the stool is a measure for evaluating the GI healthy function. According to TPM resources, the stool should have

normal odor, normal consistency (like honey) and match with main meals in frequency and quantity. Defecation should be with no pain and fecal material should have no burning and acuity. Stool should not be contaminated with any phlegm, pus or blood.[1,8]

Two factors help normal and painless defecation, the first is the bile excretes from liver which stimulates the intestines for defecation, and the second is the reeh (gas) which produces during the food digestion in the intestines. Thermal effects of the intestines on the wastes of digestion can cause evaporation of humid matters and produce reeh.[1]

Etiology of Functional Constipation

The main pathophysiology of chronic constipation is the increasing rectal compliance with no reduction in rectal sensitivity.[9] Common cause of chronic functional constipation in children seems to be episodes of painful defecation followed by a withholding behavior and subsequently entering into the vicious cycle of constipation.[10] About one-quarter of adults with constipation has rectal hyposensitivity. In children, the cause of sensorimotor dysfunction is usually due to the fecal withholding behavior.[11] Females are more prone to constipation compared with the males[12] and slow transit constipation is more common in women.[4] Increased rectal compliance is one of the prominent features in childhood constipation. Higher compliance causes larger needed stool mass to produce the sufficient intrarectal pressure to urge defecation.[9]

Long-term consumption of anticholinergic, anticonvulsant, antihistaminic, antimotility and antimuscarinic agents as well as benzodiazepines, diuretics, calcium channel blockers, opiate, psychotherapeutic, sedative-hypnotic drugs and iron may cause constipation in susceptible individuals.[13] It seems that changes in bowel habits may disturb colonic motor functions and consequently lead to the constipation.[14] The cause of fecal incontinence in children and adults is usually mentioned as overflow incontinence, however, pelvic floor dysfunction is also considered as a reason in adult fecal incontinence.[15]

Etiology in TPM Approach

Every factor that weakens da'fe'eh and strengthens ma'sekeh can be considered as the cause of constipation. Low food intake or foods with dry temperament, dryness of gastrointestinal tract, polyuria or diaphoresis and exercise as well as intestine sensory loss were discussed as main causes of constipation.[1,16] Some fruits including banana, apple, pome, potato, cucumber, palm, pear and foods with difficult digestion are common causes of constipation.[17,18] Foods with cold temperament such as pickles and cold drinks were considered as causes of constipation in obese and inactive patients. On the contrary, causes of constipation in thin and active people were mentioned as inobservance of nutritional schemes and inadequate water intake. Excessive exercise with inadequate rest was also reported as a main risk for developing constipation.[18]

Medical Intervention

Most patients suffering from chronic constipation prefer to take available over the counter laxatives rather than seeking medical counseling. The commonly used medications for chronic constipation comprise indigestible fiber, osmotic laxatives, stimulants and stool softeners.[19] Despite the effectiveness of laxatives, cessation of therapy is usually accompanied with recurrent constipation.[20] Fibers are known as poorly digestible foods, generally classified into insoluble such as lignin compounds and cellulose, and water soluble like mucilage, pectin and gums. Water soluble fibers stimulate colon transit and increase stool volume and output. Different types of fiber possess different impacts on constipation. Some insoluble fibers may have unwanted effects, and thus should be used cautiously.[21]

TPM sources have introduced many medicinal herbs for constipation. Some of those are proved by current knowledge. *Ficus carica* L. paste has improved the symptoms of constipation in rats.[22] *Zingiber officinale roscoe* and *Allium sativum* L. are considered safe herbs according to most studies.[2] Colchicine, a medicine derived from *Colchicum autumnale* L. can be used as an effective medication for constipation.[23] Few studies showed that massage therapy could be an effective adjunct therapy for constipation. However, more structured clinical trials must be performed to confirm these findings.[24]

TPM Approaches to Therapy

Management of constipation in TPM includes dietary schemes, oil massages and subsequently, simple herbal medicines. Obese patients were recommended to have less sleep, more exercise and

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to avoid eating dairy products with meals. Daily sleep and sleep after meal were exhibited for this group. In contrast, thin patients were asked to sleep more and avoid much activity to put them in risk of excessive water loss.[1] Sweet almond, *Alhagi maurorum* Medik., *Ficus carica* L. paste and *Commiphora mukul* (Stocks) Hook. Mukul as effective emollient agents were recommended for constipation.[17,25,26] Rooster, cockerel meat pottage, Morri (a kind of pottage) and stew with tamarind were as recommended foods for constipated people.[27] Abdominal unctioning with sweet almond, olive or castor oil was noted as a proper treatment for constipated children.[25] Table 1 represented cited medicinal herbs for constipation along with common side effects and medicines or foods for the elimination of those undesirable effects.

Table 1. Cited Medicinal Herbs for Constipation in TPM

Scientific name	Traditional name	Plant family	Part used	Side effect (traditional); modification of side effect	Dose (up to)
Alhagi maurorum Medik.	Taranjabin	Fabaceae	Gum	Affects spleen; Tamarind and common jujube	10–70 g/day
Allium ampeloprasum L.	Korrath	Amaryllidaceae	Leaf	GI upset; Fennel and chicory	–
Allium cepa L.	Basal	Amaryllidaceae	Bulb	Headache; Vinegar	–
Allium sativum L.	Soum	Amaryllidaceae	Bulb	Headache; Fennel and oxymel	–
Anethum graveolens L.	Shebet	Apiaceae	Leaf, Seed	Nausea, Visual weakness; Cinnamon, honey, lemon and oxymel	32 g/day (seed)
Asparagus officinalis L.	Helioon	Asparagaceae	Root	Affects CNS; Oxymel	8 g/day
Brassica oleracea L.	Karnab	Brassicaceae	Leaf	Flatulence; –	–
Capparis spinosa L.	Kebar	Capparaceae	Root	Affects kidney and bladder; –	12 g/day
Cassia fistula L.	Khiar-shanbar	Caesalpiniaceae	Fruit	GI-upset; Mastic and anise, almond oil	20–80 g/day
Cinnamomum verum J.Presl	Darsini	Lauraceae	Bark	Headache; Tragacanth	8–20 g/day
Citrullus colocynthis (L.) Schrad.	Hanzal	Cucurbitaceae	Fruit	GI upset; Gum arabic or tragacanth	2–4 g/day
Commiphora mukul (Hook. ex Stocks) Engl.	Moql	Burseraceae	Gum	Affects liver and lung; Tragacanth and saffron	4 g/day
Cucurbita pepo L.	Qar'ae	Cucurbitaceae	Fruit	–	–
Descurainia sophia (L.) Webb ex Prantl	khobbah	Brassicaceae	Seed	Headache; Tragacanth	4–8 g/day
Ficus carica L.	Tin	Moraceae	Fruit	GI upset; Sugar	120 g/day
Ferula persica Willd.	Barijeh	Apiaceae	Gum	Affects CNS; Violet oil and camphor	4 g/day
Hordeum vulgare L.	Shaeer	Poaceae	Seed	Affects bladder; Anise	–
Malva sylvestris L.	Khobbazi	Malvaceae	Leaf	GI upset; Cumin or caraway	200 g/day
Olea europaea L.	Zeit (the oil)	Oleaceae	Fruit	Insomnia; Walnut	28 g/day
Plantago ovata Forssk.	Bazr-e-qatoona	Plantaginaceae	Seed	Affects on CNS; Honey or oxymel	12 g/day
Prunus armeniaca L.	Meshmesh	Rosaceae	Fruit	Erosion, Flatulence; Anise or Oxymel	–
Prunus domestica L.	Ejjass	Rosaceae	Fruit	–	–
Prunus dulcis (Mill.) D.A.Webb	Lovz-al-holv	Rosaceae	Seed	–	–
Prunus persica (L.) Batsch	Khookh	Rosaceae	Fruit	–	–
Raphanus raphanistrum L.	Fojl	Brassicaceae	Root	Cramps; Salted honey and caraway	80 g/ day
Senna alexandrina Mill.	Senna makki	Caesalpiniaceae	Leaf	Cramps; Almond oil	12 g/day
Spinacia oleracea L.	Esphanakh	Chenopodiaceae	Leaf	Headache; Cooking with almond oil, cinnamon	8 g/day (extract)
Tamarindus indica L.	Tamr-e-hendi	Caesalpiniaceae	Fruit	Cough, GI erosion; Quince seeds mucilage, tragacanth	28–120 g/day
Trigonella foenum-graecum L.	Holbeh	Apiaceae	Seed	Headache, nausea; Anise and oxymel	50 g/day
Triticum aestivum L.	Hentah	Poaceae	Seed	Flatulence; Old vinegar	–
Vitis vinifera L.	Enab	Vitaceae	Fruit	Flatulence	–
Ziziphus jujuba Mill.	Onnab	Rhamnaceae	Fruit	Flatulence; Sugar and currant	5–10 fruits

These medicaments were highly administered by early Persian scholars.[1,28]

Some herbal medicines called mosshelat, and used as purgatives that can evacuate bad humors. Herbs which can evacuate phlegm and black bile are called mosshel-e-balqam and mosshel-e-soada, respectively. Using these medicaments without consulting in TPM may risk the patient's health. These medicines usually have side effects, and should be prescribed with special consideration. TPM physician should first determine the type of dystemperament and diagnose which humor is out of balance and then prescribe the drugs called monzej that prepare the bad humor for exiting from the body. Monzej is a simple or compound herbal drug that condenses the thin or dilutes the thick matters and prepare them for evacuation. Subsequently, the physician can prescribe an appropriate mosshel to expel the bad humor. *Fumaria officinalis* L., *Polypodium vulgare* L. and *Terminalia bellirica* (Gaertn.) Roxb. were reported as mosshel-e-soada and *Operculina turpethum* (L.) *Silva Manso* and *Moringa arabica* (Lam.) Pers. were noted as mosshel-e-balqam.[28]

Discussion

According to TPM theories, the first step in treating a disease is the elimination of disease causes (asbab-e-maraz) and also providing the causes of health (asbab-e-sehhat). If the physician considers the improper lifestyle as the most important cause of constipation, he should learn patients the right way. TPM proposes an easy and safe way for the treatment of constipation. The management is usually consisted of observing six principle rules as air, fluids and foods, sleep and wake, activity and rest, retention and release as well as moods. Hot weather, insufficient sleep, inappropriate mood such as rage and anger were mentioned as causes of constipation in young adults with warm temperament. On the other hand, people with cold temperament should avoid overeating, eating foods with cold temperament like yogurt, fish and pickle as well as daily sleep and long-time rest.[1,28]

General recommendations for all groups comprise eating meals in calm and peaceful environments, chewing well, avoiding stress, observing a proper time between eating and sleep, intercourse and physical activity, as well as abstaining junk foods. Drinking water through the meals or just after meal leads to maldigestion and consequently, constipation in susceptible individuals. The young people need to drink small amounts of water with their meal, but the elderly should avoid drinking water through their meals.[1,28]

There are many medicinal herbs recommended By TPM to manage the constipation (Table 1). But respective clinical and pharmacological activities of most reported medicines have not yet been examined. Effectiveness of *Ficus carica* L. in constipated rat model,[22] safety and efficacy of Senna in geriatric patients,[29] *Triticum aestivum* L. as dietary fiber for the treatment of constipation and also reducing the laxative use[30] and efficacy of *Ziziphus jujuba* Mill. in chronic idiopathic constipation in comparison with placebo[31] are assessed and proved in current knowledge.

Health care providers should know the proper condition which the herbal medicines should be administered in and be able to guide the patients about the benefits and hazards of herbal remedies, commonly used in their living origin. Many herbal medicines may be poisonous even in smaller amounts, however long-term use of seemingly safe herbs may risks the health of the patients.

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