

REVIEW ARTICLE

Gastric Dystemperament (*Sue-mizaj*) in Iranian Traditional Medicine

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Abstract: Background: The stomach plays a vital role in the human body. Its clinical problems are very prevalent.

Nowadays, new branches of science have emerged because of human individual differences. Many medical schools such as Iranian Traditional Medicine (ITM) established the basis for the prevention, diagnosis, and treatment based on individual differences.

Objective: The purpose of this study is to summarize identification indices of Gastric Dystemperament to help in better diagnosis.

ARTICLE HISTORY

Received: January 01, 2019
Revised: June 26, 2019
Accepted: July 08, 2019

DOI:
10.2174/1573401315666190821112354

Methods: This was a qualitative review study. Definitions and symptoms of Stomach Dystemperament were derived from reliable sources of ITM from 900 AD to 1900 AD (Kamil-al-sinaa al tib-biya, Teb-e-Akbari, Exir Azam, Al-Qanun fi al tibb, Mansouri Fi-al-teb, Al-Havi, Zakhire Kharazmshahi, Hidayat al-Muta'allemin fi al-tibb, Ferdos al-Hekmat fi al-tib, Sharh Al Qurashi al-Qanun, Sharh-e asbab al-Alamat) and English and Persian indices.

Results: The most important factors and symptoms to be considered as gastric dystemperament include digestion, thirst, appetite, belching, bloating, gastric emptying time, burning stomach, reflux, gastric pain, the effect of food quality (coldness, heat, wet, dryness), mouth moisture and taste, tongue and mouth status, quality of body waste material (urine, stool), and palpation of the stomach area.

Conclusion: Iranian Traditional Medicine sources have mentioned the indicators of gastric dystemperament, which can be used for more effective diagnosis and treatment and even prevention of gastric diseases.

Keywords: Mizaj, persian medicine, stomach, temperament, traditional medicine.

1. INTRODUCTION

Gastrointestinal diseases are the leading causes of death and increased healthcare costs in some parts of the world. Dyspepsia and reflux are the most common gastrointestinal diseases, which diminish the quality of life and incur heavy economic burden [1]. Patients with multiple complaints and symptoms of upper gastrointestinal disease constitute a high percentage of patients referring to the gastrointestinal tract wards all over the world [2]. The stomach is an important organ in the body and has a vital role in the body and its problems are very common in clinical medicine [3, 4].

The prevalence of dyspepsia, which is a complex of symptoms of the upper gastrointestinal tract diseases is 2.9-29% in Iran and 8-14% in Asia and 17-27% in western societies [5].

According to the statistics provided by the World Health Organization (WHO), worldwide, gastric cancer is the second leading cause of death [6]. In Asia and Eastern Europe, 20 out of every 100,000 and in North America, 10 out of every 100,000 deaths are caused by this disease [7].

Since the first decade of the 21st century, there has been increasing interest in genomics and proteomics research in pharmaceutical studies. Indeed, individual differences cause different responses to drugs and therapies. The sciences such as pharmacogenetics, pharmacogenomics, genomics, proteomics, metabolomics, epigenomics, transcriptomics, antio-

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modynamics, and other studies have led science toward personalized medicine, which emphasizes specific characteristics of each individual in the diagnosis and treatment [1-8]. These individual differences are observed in different temperaments in ITM. For centuries, several comprehensive medical schools such as Chinese Traditional Medicine and Indian Traditional Medicine as well as Persian medicine have established the foundation for the prevention, diagnosis, and treatment based on the individual differences [8]. ITM (Iranian Traditional Medicine) or Persian medicine as one of the branches of Traditional medicine, has a long history [9]. For many years, ITM remained a widely adopted treatment approach in many countries [10]. In this branch of medicine, concerning the underlying temperament, the recommendations are based on lifestyle modifications and directives for living, eating, and drinking, physical activity, sleep and awakening cycle, relaxation phase, *etc.* This highlights that health is maintained by lifestyle modification [11-13].

ITM purports that the primary components of the human body are composed of four elements: elemental fire, elemental water, elemental air, and elemental soil. These four classical elements of earth are only symbols and indicate characteristics of heat and coldness, dryness, and wetness. Temperament in terms of traditional medicine is due to the interaction between the bodily elements [8]. According to this branch of medicine temperaments are classified into 9 categories (hot, cold, wet, dry, hot and wet, hot and dry, cold and wet, cold and dry, and temperate) [8-14].

To detect the general temperament (Mizaj) of each person, traditional physicians use different methods such as palpation, attention to muscle and body fat, examination of hair, skin color, the shape of limbs, hours of sleep and awakening, individual action, assessment of waste material, as well as general overall actions and emotional reactions [15].

In this branch of medicine, each organ has a unique temperament, and the entire body temperament (general) is the result of the combination of temperaments of all the organs [8].

In ITM, the stomach is a very important organ in the body and affects other organs such as the liver and heart [3]. Healthy foods play a vital role in the health of the stomach [16]. As stomach diseases have a high prevalence and given that ITM is one of the richest medical schools in the world [9], assessment of ITM as a complementary method to treat these diseases and reduce the incidence and its complications which can be helpful in the community. In this article, the definition and symptoms of stomach dystemperament have been extracted from important and valuable textbooks of traditional medicine.

2. MATERIALS AND METHOD

This study was a qualitative study pooled from the Iranian Traditional books.

Definitions and symptoms of gastric dystemperament have been taken from important traditional medicine books of ITM including:

1. Kamil-al-sinaa al tibbiya (The perfect book of the art of medicine Ali ibn Abbas majusi)
2. Teb-e-Akbari (Akbari's Medicine, Arzani)
3. Exir Azam (Great Elixir, Muhamad Nazim Jahan)
4. Al-Qanun fi al tibb (the canon of medicine, Avicenna)
5. Mansouri Fi- al-teb (Liber al-Mansuri, Zakaria Razi)
6. Al-Havi (Liber Continent, Zakaria Razi),
7. Zakhire Kharazmshahi (Treasure of the Khwarazm Shah, Jorjani)
8. Hidayat al-Muta'allemin fi al-tibb (A Guide for medical students, Akhveini)
9. Ferdos al-Hekmat fi al-tib (Ali ibn Sahl Tabari)
10. Sharh Al Qurashi al-Qanun
11. Sharh-e asbab al-Alamat (explanation of causes and symptoms, Nafis Kermani)

Further, English indices as Web of Science, Google Scholar, Science Direct, PubMed, Scopus as well as Persian indices such as Magiran, Iran Doc, SID were studied without limitations of the year using the following keywords: Gastric, Temperament, Stomach, dystemperament.

3. RESULTS

A total of 18 review articles with the mentioned keywords were found; in 16 articles, definitions and symptoms of gastric dystemperament were presented as a table or a brief explanation included alongside the main issue of the article. Two articles dealt with gastric temperament. In the Iranian literature, various indices have been mentioned for determining the general temperament and organ temperament [1-13].

Among the most important indicators to be considered are digestion, thirst, appetite, belching, bloating, gastric emptying time, burning stomach, reflux, gastric pain, the effect of food quality (coldness, heat, wet, dryness), mouth moisture, mouth taste, tongue and, quality of bodys' waste material (urine, stool,...), and sensation upon palpation of the stomach area.

Only in an Arabic traditional medicine book called " Al-Tasrif-an-Ajz al-Talif", stomach temperament was mentioned as cold and dry, which is due to the predominance of coldness and dryness in its components (gastric nerve nature) [17].

Avicenna in his book (Al- Qanun) emphasized the symptoms of temperament in a normal stomach, and clearly differentiated it from gastric dystemperament (Sue-mizaj). He noted that in a hot normal stomach, digestion is strong. The person with this stomach tends to have hot mizaj foods such as chili foods and gain some symptoms like nausea, vomiting and abdominal pain, with cold mizaj foods such as yogurt. In normal cold temperament, there is a reduction in the power

of digestion and appetite, and only delicate and light foods are digested where there is a desire to eat cold foods. In normal dry temperament, there is great thirst and a greater desire to eat dry foods, while in the normal wet gastric temperament, there is little thirst and desire to eat moisturizing food such as simple soup [18]. Dystemperament refers to the disequilibrium of any organ, and gastric dystemperament occurs when the normal gastric temperament changes and the stomach adopts a new temperament which is different from its mizaj and therefore results in malfunctioning [18, 19].

Dystemperament is divided into simple and humoral dystemperaments (Sue-mizaj). In the case of simple dystemperaments, there are changes in the body quality, such as body heating through fever or body cooling due to frostbite. However, in humoral dystemperaments, there is a substance called humor (KHELT), causing changes in the body condition. Humors is a wet and liquid material which is obtained from food in the first stage of its permutation [20].

The symptoms of simple dystemperaments and humoral dystemperaments are different, which are summarized in Tables 1 and 2.

Table 1. Symptoms of simple stomach temperaments.

Temperament Type	Simple Gastric Dystemperament (<i>Sue-mizaj</i>)			
	Hot	Cold	Wet	Dry
Quality of digestion	-Food spoilage in the stomach and turning into bad stuff [21] - Spoilage of light foods, such as poultry meat and so on, and hot foodstuffs (<i>MOSAKHANAT</i>) and trace meals [24-27] -The ability to digest colds with hard digestion [21] -Burning and destroying (<i>EHTERAGH</i>) of light food in the stomach [22, 23] -Changing food to fat in the stomach (<i>NOMOSAT</i>) [23] - gastric pain [24]	-Feeling heavy after Concentrated food [21] -Poor digestion [23, 24, 28-26] -Digestion of light foods [22-24-28] -Reflux [23-26] - Extreme gastric pain after food [22] - Gastric pain [24]	-Feeling nauseous after food in case of movement [22-28] - Incomplete digestion [21]	-Incomplete digestion [21]
Appetite	-Low appetite [23-30] -Anorexia often with good digestion, and Faint in hunger [25-28] -If hunger lasts, loss of appetite [28]	-High appetite [23, 24, 26-28-30]	-Low appetite [26]	-High appetite [26]
Belching	-Foggy (smoky) [21-24, 26-28] -Bitter, foggy, like a sprinkled fish and chopped egg [29]	-Sour [21-24]		
Bloating		-Bloating [26-28] -Pain after meals due to Bloating and wind [22]	-Sound of the intestines (<i>Gharagher</i>) [28]	
Transition time of food from the stomach		-Slow transition time of food from the stomach [26]	-Rapid transition time of food from the stomach [23-26]	
Thirst	-Thirst [23-26] -Excessive thirst [21-22-24-27-29] -Tendency to cold water [25]	-Little Thirst [21, 22-24, 27, 28]	-Little Thirst [22, 23, 27, 28-30]	-High thirst [26-28] -Thirst and drought tongue [23-24]
Saliva and tongue and mouth condition	-Bad saliva smell [21, 22, 24-28] -Bad saliva smell similar to smell of hot sulfur springs and fish [21] -Elevated salivary secretion in hunger [22-25, 26-28] -Dry mouth [23, 26, 30] -Drooling water from the mouth [23] - Heat saliva [28] - mouth taste is bitter [28]	-High saliva [30] - mouth taste is Sour [28, 29]	-High saliva (High glaze mouth-23-26-28) - white and milky color tongue [28]	-Mouth Dryness [28] -Tongue Dryness [22-24, 26-28]

(Table 1) contd...

Temperament Type	Simple Gastric Dystemperament (<i>Sue-mizaj</i>)			
Indicator	Hot	Cold	Wet	Dry
Adoption and desire for specific food (benefits and harm to the quality)	-Utilization of cold foods [22, 24, 26, 28] -The pleasure of drinking cold water and the placing cold things on the stomach area [21] -Stomach Pain Relief in the Use of colds foods (<i>MO-BAREDAT</i> -21) -The tendency towards light and cold foods and cold water but hot drinks is harmful [25]	-To benefit from placing warm things on the stomach area and the consumption of hot food [24] -In the event of pain, relieve it with heat foods [21] -To benefit from heating and light food [27]	-The hatred of wet food and the benefits of dry food [26-28] Food	-The benefits of moisturizing foods [22, 23, 27, 28] -The hatred of dry food, and the benefit of wet food [24-26] -Benefit from the types of Soup and meat water and oils [21]
Urin	- Diluted urine [21]	- Diluted urine [21]	- Diluted urine [21]	- Diluted urine [21]
Stool	-Constipation [23]	-Soft and flatulent stool [24-26] -Stool with non digested materials [23, 24]	-Soft stool [26] Diarrhea with the smallest cause [23]	-Dry stools [24-26]
Quality of body	-Slimming [22]	-Abdominal enlargement [24]	-Loose body or flappy (<i>TARHOL</i>) [23-26]	Slimming [23, 24, 26, 28]
Other symptoms	-A hot sensation on the touch of the stomach by a person with moderate temperature [21-24]	-Headache and dizziness [22-28] -A cold sensation on the touch of the stomach area by a person with a moderate temperature [23, 24, 26]		-Sensation of movement of fluids in the stomach (<i>TAKHAZ'KHOZ</i>) [24]

Table 2. Symptoms of gastric humoral dystemperament (*Sue-mizaj*).

Temperament Type	Simple Gastric Humoral Dystemperament [<i>Sue-mizaj</i>]			
Indicator	Sanguine	Melancholic	Phlegmatic	Choleric
Quality of digestion	-Changing food to bad materials (<i>NOMOSAT</i> -23-26) -Nausea [24-26]	-Strong digestion [25, 26] - Gastric burning that recovery from eating [25] -Nausea [21, 25, 26]	-poor digestion [23, 26] -Nausea [24, 26]	-Poor digestion [23-26] - Gastric burning, especially in hunger [23-26]
Appetite	-Low appetite [21] -Moderate [24-26]	-Low appetite despite strong digestion [22, 24, 25, 26] -Low appetite [21-29] -Lack of patience in hunger [24-25]	-Low appetite [21, 23, 24, 26, 28]	-High appetite [24-26-28] -High appetite despite poor digestion [23-28]
Belching	-Foggy [smoky] [21]	-Foggy [smoky] [21-26] -Sharp, funky, like a sprinkled fish, <i>ZANGARI</i> [26] -Sharp, funky bleching [23]	-Sour [21, 24, 25, 26]	-Sour [21, 24, 25]
Bloating			-Bloating [26] -Bloating caused by heavy meals that can be resolved by burrow [28]	-Bloating [23-26-28]
Transition time of food from the stomach			-Slow transition time of food from the stomach [26]	

(Table 2) contd...

Temperament Type	Simple Gastric Humoral Dystemperament [<i>Sue-mizaj</i>]			
	Sanguine	Melancholic	Phlegmatic	Choleric
Thirst		-Thirst [21, 23-26]	-Lack of thirst, lack of removal of thirst with hot water phlegmatic salty symptoms [26-28] -Little thirst [21] -False thirst [23]	-Low thirst [21-24] -Dry mouth, less desire for water [25]
Saliva and tongue and mouth condition	-Bad saliva smell [21] -Elevated salivary secretion in hunger [23, 24, 26] -Mouth taste is Sour [low heat] [28] -Red and coarse tongue [28]	-Bad saliva smell [21] -Elevated salivary secretion in hunger [25, 26] -Dryness of the tongue [23, 24] -Dry and coarse Mouth [29] -Mouth taste is Bitter [23, 26, 28] -Yellow tongue [28] Colorful red or black tongue [29]	-High saliva [26-28] -Mouth taste is Tasteless / Salty / Sour [28] -Mouth taste is Tasteless, tasting sweetness [22] -white and milky color tongue[28]	-Dry Mouth [24, 25] -Mouth taste is Sour [21] -Black Tongue [28]
Adoption and desire for specific food [benefits and harm to the quality]		-The pleasure of drinking cold water and placing cold things on the stomach area [21]	-The desire for hot foods, and the reluctance of eating foods that cause bloating and nausea [28] -The benefits of hot food [24-26] -The desire for hot food [23] -To benefit from placing warm things on the stomach area and the consumption of hot and food [21]	-The hatred of dry food, and the benefit of moisturizing foods [26] To benefit from placing warm things on the stomach area and the consumption of hot and food [21]
Urin	-Thick urine [21]	-Thick urine [21]	-Thick urine [21]	-Thick urine [21] -White urine [24]
Stool		-Bile in stool and urine [23, 25, 26] -Constipation [29]	-Soft stool [23, 24, 26]	
Quality of body		-Slimming [24-26]	-Loose body or flappy [<i>TARHOL</i>] [23, 24, 26]	-The patient becomes thinner every day [24, 25]
Other symptoms		-Faint [21] -Body vessels are prominent and bloody [25]	-Slow pulse [24]	-Sour vomiting along with teeth slowing [23-26] -Splenomegaly [23-26] -Obsession in bad thoughts and horror [24] coarse Mouth [24]

4. DISCUSSION

Although modern medicine has succeeded in diagnosing and analyzing diseases, ITM is a complete medical system with a huge volume of information regarding the diagnoses and treatment of diseases and their causes [1].

In this study, the definitions and symptoms of gastric dystemperament were extracted and classified from ITM books and papers.

In Alizadeh *et al.*'s study (2017), which specifically dealt with the subject of stomach, major and minor symptoms were identified in the diagnosis of gastric dystemperament based on a number of traditional medicine books and experts' views. However, it was not specified in the article

whether the major or minor criteria were based on the book and sources of Iranian traditional medicine or the opinion of experts [3].

The article by Parsa *et al.* (2018) focused solely on the gastric temperament. In this article, attention was paid to temperament for gastric health along with the symptoms of gastric dystemperament [1].

Considering the temperament and the various kinds of gastric dystemperament (Sue-mizaj) in ITM, the sources of this medicine have completely identified the symptoms of gastric dystemperament. With these in mind, there are solutions to treat gastrointestinal diseases, especially the stomach. For example, some gastric dystemperaments are predictive of future gastric cancer, which can be prevented by rec-

Table 3. Recommended food for stomach dystemperaments.

Dystemperament	Recommended Food in Iranian Traditional Medicine
Cold gastric dystemperament	Foods with hot temperament like Meat of Some birds
	Fried food (<i>Motanjana</i> t)
	Foods with Cumin, cinnamon, peppers and garlic
Hot gastric dystemperament	Foods with cold temperament like Pumpkin
	Foods that include pomegranate
	Meat of Lamb and Capricorni and chicken
	Lemon syrup and apple syrup
	Barberry, Pomegranate and Sumac
	Yogurt
Wet gastric dystemperament	Fried food (<i>Motanjana</i> t)
	Vegetable dill, Cinnamon and cumin
	Olive oil
	Combination of sugar and honey
	Eating salty food at the beginning of the meal
Dry gastric dystemperament	Milk
	Fish
	Meat of Some birds

ognizing these dystemperaments and giving nutritional instructions [3].

CONCLUSION

To apply the diagnosis of Iranian medicine practically, there should be a single approach to definitions. As far as possible, the definitions of Iranian medicine and modern medicine should be used simultaneously to achieve a comprehensive and practical definition. In addition, since gastric temperament, indices have been described qualitatively and sometimes without specific definitions in Iranian medicine resources, sometimes it leads to disagreements among the scholars regarding the definition of the index and the method of associating the index with the stomach temperament. This eventually leads to discrepancy between them in defining the stomach temperament. While explaining the definition, the method of evaluation and justification of stomach temperament indices, further studies could work on diagnostic stability and agreement between experts of Iranian medicine in determining the temperament.

CONSENT FOR PUBLICATION

Not applicable.

FUNDING

None.

CONFLICT OF INTEREST

The authors declare no conflict of interest, financial or otherwise.

ACKNOWLEDGEMENTS

This article is based on the PhD dissertation approved by the School of Traditional Medicine of Shahid Beheshti University of Medical Sciences.

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