



Review Article

PHYSIO-ANATOMICAL EXPLORATION OF ROLE OF MENTAL HEALTH IN ANNAVAHA SROTAS DISORDERS

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KEYWORDS: *Annavaahasrotas*,
Mental Stress, *Agnidushti*,
Mandagni.

ABSTRACT

The good health is defined not only on basis of physical well being but rather also on mental well being. As told in *Ayurveda* texts- "*Prasanna Atmendriya Manah Swasth Ityabhidheeyate*". In era of globalization, the fast & modernized lifestyle has taken toll on one's health. Now a day, majority of population is suffering from digestive problems such as acidity, reflux, bloating, stomach pain, constipation, and anorexia. These digestive problems are mainly due to bad dietary habits like junk foods, lack of balanced diet etc and also due lack of proper sleep, stress etc. Stress shows both long term and short term effect on gut functions like gastric secretions, gut motility, mucosal permeability etc. Our *Acharas* were well aware about this factor for digestive disorders, as they included *Shoka*, *Bhaya*, *Krodha* etc. as *Nidana* (cause) of digestive disorders. These various *Nidana* of digestive disorders causes *Agnidushti* which is cause of *Annava srotodushti* and *Mandagni*. It is very important to understand the relationship between gut and mental health to know aetio-pathogenesis of disorders, which will help to develop holistic approach for better treatment of *Annava srotas* Disorders.

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INTRODUCTION

In present era we are facing more psychological problem than physical suffering. Assorted mild or severe psychological issues are very common now a day. These psychological issues affect the healthy wellbeing of an individual. The concept of mental health has been very well adopted in *Ayurveda*. Along with the various modern life style changes, mental health of a person makes more and more susceptible for the diseases of *Annava srotas* by *Mandagni*. Among the entire factors for maintenance of positive health, proper digestion of food occupies the most important position because healthy digestive system is an important determinant of a person's healthy and well being. Because good digestion assures that all of the nutrients taken in through eating are assimilated in the healthy manner. It is also described in *Ayurvedic* classics as *Mandagni* is the root cause of every disease. The symptoms of poor digestion include constipation, bloating, vomiting, diarrhoea, etc. contemporary system of medicine has given them named such as irritable bowel syndrome, ulcerative colitis, pancreatitis, etc. There are many causes of poor digestion like faulty lifestyle, Insomnia, ill dietary habits, lack of physical activity (sedentary life) and psychological issues (stress, anger, depression etc). Mental health is an important factor which affects the gastrointestinal system, so it is important to understand the role of mental health in *Annava srotas Vyadhis* (digestive disorders). This will help to develop holistic approach for better treatment of *Annava srotas* Disorders.

Literal review

Our *Acharyas* were well known about fact that mental health has important role in diseases of *Annava srotas*. The main cause of *Annava srotodushti* is deformity of *Agnidushti*¹. According to fundamental principles of *Ayurveda*; *Agni* has an important role in the physiological functioning of body. Broadly speaking this *Agni* can be divided into three types on the basis of substratum they act-

- *Jatharagni*
- *Bhutagni*
- *Dhatvagni*

Jatharagni has been considered prime among all *Agni*. The functioning of other *Agni* (*Bhutagni* and *Dhatvagni*) is dependent on *Jatharagni*. The *Agni* transforms the food in various forms which can be easily assimilated by our body. If *Jatharagi* become weak, it will result into improper digestion of food and improper formation of consequently *Uttarottar dhatu*. *Acharya Charak*, *Susruta* and *Vagbhata* have described various *Nidan* of *Agnimandhya* along with mental factors.

Acharya Charak has described that excessive intake of food, consuming *Apathya*, etc are not only cause of *Aamotpatti* but several mental conditions such as *Kaam*, *Krodh*, *Lobh*, *Moha*, etc. are causes of *Aamotpatti*. He also said that various conditions like *Chinta*, *Shoka*, *Bhaya*, *Krodha*, *Dukha*, and lack of proper sleep are also responsible for improper digestion of food². *Acharya*

Susruta also said that some mental factors like *Ershya*, *Bhaya*, *Krodha*, *Shok* are the causes of improper food digestion³. In *Rasvimanadhyay* of *Charak*, he mentioned about the *Aahar -Vidhi Vidhan*. He said that a person should take the food with mentally comfort conditions. Means a person should be mentally happy at the time of food intake.

Various diseases of *Annavaha Srotas* described in classical texts, in which role of *Mansik bhaav* (mental factor like *Ershya*, *Bhaya*, *Krodha*, *Shok*, *Chinta*, *Dukha*) is important in *Samprapti* of these diseases. Some of these diseases are described below.

Ajirna- In *Sutrasthan Acharya Vagbhata* mentioned that *Krodha*, *Shoka* are also the *Nidan* of *Ajirna*.⁴

Amlapitta -In *Sutra Sthan Acharya Susruta* mentioned about *Guna* of *Pitta Dosh* and he says that the *Rasa* of *Pitta Dosh* in its natural state is *Katu*, and when it got vitiated (*Vidhagdha*) its *Rasa* become *Amla* and due to *Vidhagdha* of *Pitta* this disease is called *Amlapitta*. So the vitiated *Pitta* is the main cause of *Amlapitta*. *Acharya Susruta* describes the *Nidan* of *Vitiation of Pitta Dosh* and he included *Shok*, *Bhaya*, and *Krodh* as *Nidan* of *Vitiation of Pitta Dosh*⁵. So we can understand that along with *Sharirik Doshas*, the *Mansik Doshas* have important role in pathology in *Amlapitta*.

Chhardi (Vomiting)- According to *Acharya Charak* the causes of *Vataj Chhardi* are *Shoka*, *Bhaya* along with the other causes of the disease⁶. These causes vitiate the *Vata Dosh*. *Vata Dosh* vitiates the other *Dosh* in stomach and provides upward direction of *Doshas*.

Atisara (diarrhoea)- *Acharya Charak* and *Susruta* both give importance to the psychological factor in onset of disease. *Acharya Charak* mentioned *Krodha* and *Irshya* as *Nidan* of the disease⁷. *Acharya Susruta* also told that *Bhaya* and *Shoka* are one of the factors for onset of disease⁸.

Shoola-Madhavkar has described the causes and symptoms of *Shoola* in detail. He mentioned in the *Nidan* of *Vaatik Shoola* (pain in intestinal obstruction) that *Shok* is the cause or increasing the pain. In *Paittik Shoola* (*Peritonitis*, *Cholecystitis*, *Peritonitis*) he said *Krodh* is the cause of pain.

Irritable bowel syndrome- Irritable bowel syndrome is Functional gastrointestinal disorder and defined by the absence of structural pathology. The primary symptoms of IBS are abdominal pain or discomfort in association with frequent diarrhoea or constipation and change in bowel habits. Approximately 20% of general population fulfil the diagnostic criteria for IBS. It is believed that most of the patients develop symptoms in response to psychosocial factor. Most of the patient seen in general practice do not have psychological problems but about 50% of patients referral to hospital meet criteria for psychiatric diagnosis. A range of disturbances are identified, including anxiety, depression, and neurosis. Acute psychological stress and overt psychiatric diseases are known to alter visceral perception and gastrointestinal motility in both irritable bowel patients and healthy patients.

Peptic ulcer-The term peptic ulcer refers to an ulcer in lower oesophagus, stomach or duodenum. Ulcer in the stomach or duodenum may be acute or chronic. An ulcer is formed when there is imbalance between defensive factors (gastric and duodenal mucosal resistance) and aggressive factors (the digestive power of acid and pepsin). Sometimes acute ulcers may occur following stress, when they are called stress ulcer⁹.

There are many causes of peptic ulcers (gastric and duodenal) as *H.pylori*, diminished mucosal resistance, prolong ingestion of NSAIDs and Aspirin. Anxiety, stress and strain has always been incriminated to cause of peptic ulcer¹⁰.

Anatomy of enteric nervous system-Entire length of gastrointestinal tract is supplied by the sympathetic and parasympathetic part of autonomic nervous system (ANS). Apart from these, two different nerve plexuses are present in the gut wall. It consist mesh-like system of neurons that governs the function of the gastrointestinal system. This is referred to as the enteric nervous system. Recent researches have revealed that a large number of neuroactive substance present in these plexuses. Almost every neuroactive substance which present in central nervous system are present in these plexuses. It suggests much greater complexity of function of enteric nervous system. ENS is located within the wall of digestive tract. It comprised of two well organised neural plexuses.

Myenteric plexus (Aurbach)-it is present in between longitudinal and circular muscle layer, and it controls the gastrointestinal tract motility.

Submucosal plexus (Meissner)-it is present between circular muscle layer and luminal mucosa. It regulates the blood flow and movement of the mucosa and absorptive and secretive function of the epithelium.

The enteric nervous system includes efferent, afferent and inters neurone. Sensory neurons innervate receptors in mucosa, while motor component regulates the motility, secretion, and absorption.ENS can function autonomously. Normal digestion required coordination between ENS and CNS.¹¹

Discussion

Stress response

To understand how stressful conditions interact with the gastrointestinal system, it is very important to understand that how body's internal environment changes during stressful condition. The physiologic response to stress consists of a rapid component and a slower one, acting in a coordinated manner to re-establish homeostasis.

The rapid response is the activation of the sympathetic nervous system. This is referred to as the "sympathetic-adrenomedullary system". The stress response begins in the brain. When someone faces stressful condition the ear or eye sends information to the amygdale. Amygdale interprets image and sound. Then it instantly sends information to the hypothalamus. Hypothalamus communicates with rest of body through autonomic nervous system. Autonomic nervous system has two components sympathetic and Parasympathetic

Nervous System. Hypothalamus activates the Sympathetic Nervous System by sending signals through the autonomic nervous system to the adrenal glands. These glands respond by secreting the hormone epinephrine (adrenaline) into the blood stream. As epinephrine circulates through the body, it brings the number of physiological changes in gastrointestinal system as-

- Activation of sympathetic nervous system increases the blood flow to the muscles by diverting blood flow from other part of the body like gastrointestinal tract. Lack of blood supply in these conditions affects the digestion process.
- Increased sympathetic stimulation inhibits the peristalsis (motility) and increases the tone of the sphincters.
- Decreased parasympathetic activity decreases overall activity of gastrointestinal tract, and decreases secretion of the gastro intestinal glands.

Effect on gut flora-

Exposure to stress modifies the gut flora by neurotransmitter and pro inflammatory cytokines level for e.g., norepinephrine increases the virulence of some bacteria like E.coli or C. Jejuni. Thus changes in the composition of gut flora causes trouble in normal digestive process.

CONCLUSION

On the basis of above description following conclusion has been made.

- According to our classical texts and modern literature various psychological factors play significant role in pathology of gastrointestinal diseases.
- Stressful conditions activate the sympathetic nervous system. This is responsible for alteration in gut motility, permeability, and secretions.
- A variety of neurotransmitter in stressful situation modifies the gut flora, which is ultimately responsible for digestive disorders.

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Cite this article as:

Nitin Kumar, Harish Chandra Gupta, Vikash Bhatnagar. Physio-Anatomical Exploration of Role of Mental Health in Annavaha Srotas Disorders. AYUSHDHARA, 2016;3(2):649-651.

Source of support: Nil, Conflict of interest: None Declared