

## VEGETATIVE DISORDERS IN "ULCER PATIENTS"

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### Abstract:

This article is a discussion and review article, which is aimed at studying aspects of autonomic disorders that occur in autonomic dystonia, which leads to the development of peptic ulcer disease. Data on the clinical features of autonomic dysfunction in gastric and duodenal ulcers are discussed.

**Keywords:** *automatic disorders, ulcer diseases, gastric and duodenal ulcers, autonomic nervous system, table of Geyome Veyn.*

### Introduction

Duodenal and gastric ulcers have become a social problem in many countries, affecting up to 15% of the adult population during their lifetime[1]. Despite many years of study, the etiology of duodenal and gastric ulcers still cannot be considered completely clarified. Even the Frenchman J. Cruvelier, considered the founder of the doctrine of peptic ulcer disease, describing the clinical picture, morphological changes and main complications of the ulcer, believed that the main cause and mechanisms of its development are shrouded in the darkness of deep uncertainty. This darkness has not been dispelled to this day [2]. To explain the processes accompanying the occurrence of stomach ulcers, over the past 165 years, a large number of different theories have been proposed, based on the recognition of any one pathogenetic link as the decisive factor, however, attempts to reduce the genesis of the disease to the action of any single moment have proven untenable [3].

Today, the pathology of ulceration is usually considered in terms of the relationship between the aggressive properties of gastric contents and the protective capabilities of the mucous membrane, which under normal conditions balance each other. An ulcerative defect occurs in situations where the balance is disturbed either due to increased acid-peptic aggression, or due to a weakening of the protective barrier [4]. When analyzing the literature of recent years, attention is drawn to a significant number of works that highlight the mechanism of ulcer formation using a psychosomatic approach [5].

There is no doubt that peptic ulcer of the stomach and especially the duodenum is a psychosomatic disease [6]. It is noted that the highest incidence of peptic ulcer disease occurs in the nature of major social conflicts and upheavals. Recent years have been associated with increasing social tension in society, which in turn leads to an increase in the frequency and duration of psycho-emotional stress. The resulting psychophysiological reactions under unfavorable conditions (intensity, chronicity of stress, genetic predisposition) turn into corresponding psychosomatic diseases, in particular peptic ulcer disease. This, apparently, is the main reason for the increase in the incidence of peptic ulcer disease and changes in its course in recent years [7].

Modern psychosomatic medicine studies the relationship and interconnection between a person's emotional life and the nature of his somatic disorders, the importance of individual mental and environmental factors in the etiology of diseases. At the same time, she proceeds from the fact that the living conditions of an individual in the past and present, his emotional life can have a significant impact on the functions of internal organs. Without assigning psychogenic influences the importance of the only and decisive factor in the etiology of somatic diseases, psychosomatic medicine supports the concept of the polyetiology of human diseases [8].

Psychosomatic reactions are realized with the participation of three main structures of the brain: 1) the neocortex, which is primarily responsible for the processes of memory, judgment, speech and inhibitory reactions; 2) the hypothalamus - the source of emotions, which integrates and coordinates the activity of the autonomic and endocrine systems; the limbic system, which is called the "visceral brain," which ensures the interaction of the two previously mentioned centers and is responsible for a person's behavioral reactions in a specific situation. Two endocrine systems are closely connected with these three structures of the brain: 1) the hypothalamus-pituitary gland - the adrenal cortex, which implements the reaction of psycho-emotional stress and 2) the hypothalamus-sympatheticus - the medulla of the adrenal glands, responsible for the body's protective reactions. In addition, the limbic system has connections with the reticular formation of the brain, due to which it perceives signals coming from various sense organs [9]. Consequently, psychosomatic relationships should be considered taking into account psychovegetative and psychoendocrine mechanisms that lead to the development of certain somatic diseases (35, 36). The autonomic and endocrine systems are intermediate links through which higher nerve centers regulate visceral functions. In light of these data, it is obvious that it is not so much the cortex, but certain formations of the brain (limbic-reticular complex: "visceral or emotional brain") that realize psychosomatic effects on internal organs and lead to the development of psychosomatic diseases.

Peptic ulcer disease can be considered a typical example of a psychosomatic disease, in which psychoemotional and psychosocial factors play a significant role, preceding and promoting the formation of an ulcerative defect in the stomach or duodenum [10]. At the same time, mental determinants are only cofactors that acquire causal significance only when they are combined with genetic, constitutional, environmental (meteorological, infectious - *Helicobacter pylori*), immune and local factors that realize the development of the disease [11].

Consequently, peptic ulcer disease is not a simple sum of local lesions strictly localized in individual anatomical structures (stomach, duodenum), but a systemic disease in which the somatic is always mediated by the mental [12].

The development of psychosomatic diseases depends not so much on a person's level of intelligence, but on the characteristics of the emotional-volitional complex, violations of which are manifested by anxiety and depression and are realized through psychophysiological mechanisms with the participation of vegetative and somatic reactions [13]. To explain the origin of peptic ulcer disease, a significant number of theories have been proposed and many factors involved in its development have been indicated.

Most theories explaining the occurrence of peptic ulcers take into account the role of two factors: tissue and peptic, that is, a change in the resistance of the gastric mucosa and the digestive influence of gastric juice. Currently, the most common theories focus on dysfunction of the nervous system, the participation of which is emphasized in the occurrence of both of these points.

The mechanism of transformation of difficult life situations and the psycho-emotional stress caused by them into a specific disease of a psychosomatic nature is complex and insufficiently studied. Psychosomatic disorders arise as a result of subjectively unresolvable conflicts between a person and his environment, due to unrealized, suppressed negative emotions, permanent feelings of anxiety, fear, despair or, on the contrary, anger with elements of aggression [1]. At the same time, psycho-emotional stress does not automatically entail the occurrence of a somatic disease, but contributes to the transition from a premorbid, compensated state, latent insufficiency of the gastroduodenal system to peptic ulcer disease. In this process, an important role is played by genetic factors that determine individual stress sensitivity. Acting as a “trigger”, the psycho-emotional factor creates persistent functional, metabolic, and then structural changes (ulcers) in the gastroduodenal area, reducing its tolerance to traumatic influences [3]. An important role in the implementation of the pathogenic influence of environmental factors on the state of internal organs is played by vegetative and neuroendocrine discharges that arise as a component of emotional reactions. The resulting emotional and affective disorders (excitability, suspiciousness, anxiety, depression) can contribute to chronic pain, sleep disturbances and the appearance of autonomic dysregulation with its permanent and paroxysmal manifestations [2]. Apparently, the severity of psychovegetative deviations not only participates in the clinical manifestations of the disease, but also significantly influences the further course of peptic ulcer disease [4], as well as the patient’s attitude to treatment, the accuracy and duration of implementation of the doctor’s recommendations and, thus, may have a decisive role in the duration of the achieved remission.

A detailed study of the clinical picture of some pathogenetic mechanisms of the occurrence of vegetative-vascular disorders in patients with peptic ulcer disease was carried out by a number of researchers with the aim of developing pathogenetic necessary therapeutic measures [14].

The various vegetative-vascular disorders identified were topographically considered as segmental (peripheral), suprasedgmental (cerebral) and generalized. Statistical processing of the obtained patient history data made it possible to establish the presence of a correlative dependence of vegetative-vascular disorders on the duration of the ulcerative process, therefore, to conclude that gastric organopathology is the primary one.

Autonomic-vascular disorders of the suprasedgmental level manifested themselves in the form of the following symptom complexes: visual vegetative-vascular dystonia of the hypo- and hypertonic type, venous dystonia, against the background of which paroxysmal conditions occurred, hypothalamic vegetative-vascular disorders with changes in visceral adaptation and vagoinular and sympathoadrenal mixed crises. Patients with vegetative-vascular dystonia often had cerebrovascular, cardiac and neurotic manifestations [5].

A stable type of change is observed mainly in patients with a long course of peptic ulcer disease, and paroxysmal (vagoinular crises, sympathoadrenal) in patients with severe pain in the epigastric region, with physical or emotional stress, changes in atmospheric pressure [2].

Clinical features include a variety of stage-by-stage damage to vegetative-vascular formations at both segmental and suprasedgmental levels, manifested by changes in skin color, sweating and dermographism, cardinal disorders, mixed hypothalamic crises, changes in capillary blood flow and vascular tone according to REG, temporal pressure indicators and in the central retinal artery, central adaptive vegetative-visceral mechanisms.

Increased interest in the study of neurohumoral regulation remains due to the fact that the literature data covering this issue are quite contradictory. Elimination of disorders of neurohumoral regulation

poses great difficulties in clinical practice. In particular, it is unclear whether in peptic ulcer disease the tone of the parasympathetic part of the autonomic nervous system always predominates, or whether the tone of the sympathetic part may also predominate [2]. Such contradictions, according to A.M. Vein, are explained as follows. First, blood and urine are examined, that is, fluids that interact with organs and tissues and therefore may be transformed. Secondly, high excretion of a particular amine can be combined with an increase in its content in the blood. Thirdly, a number of nervous system mediators are not strictly specific (for example, acetylcholine). Fourthly, the nature of the response is determined not by the level of the biologically active substance, but by its intimate interaction with the receptor.

Thus, if the dominance of the tone of the parasympathetic nervous system is characteristic of a newly diagnosed (i.e. short-term) and benign peptic ulcer, then the prevalence of the sympathetic nervous system is characteristic of a long-term and complicated disease.

There is a correlation between the severity of the disease, activation of the sympathetic nervous system and the presence of anxiety-depressive and psychopathic personality traits [3].

Probably, timely diagnosis and correction of psychovegetative disorders in patients with peptic ulcer disease will contribute to a more rapid achievement of full remission and improvement of the quality of life of patients.

There is no doubt that further study of polysomatic-psychovegetative disorders in the occurrence and development of peptic ulcer disease will allow us to develop the correct individualized approach to the prevention and treatment of this disease.

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