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STATE OF THE PSYCHOEMOTIONAL SPHERE IN PATIENTS WITH PEPTIC ULCER OF THE STOMACH AND DUODENUM

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Abstract: Autonomic dystonia is significantly more likely to be detected in patients with gastric ulcer than in healthy people. Under the influence of dysfunction of the autonomic nervous system, factors contribute to the formation of ulcers, such as impaired regional blood flow, motility, acid formation, creating conditions for the persistence of Helicobacter pylori. A comprehensive assessment of the vegetative status allows you to adequately assess the symptoms of gastric ulcer and to correct treatment taking into account violations of the tone of the autonomic nervous system.

Key words: peptic ulcer, galvanic skin response, autonomic dystonia, psychoemotional sphere, culvimetry.

Intorudction. The problem of gastric and duodenal ulcers currently remains relevant, both theoretically and practically. Despite the large number of domestic and foreign publications on this topic, many fundamental issues of the pathogenesis, clinical picture and prevention of this disease remain controversial and not entirely clear [1].

Peptic ulcer disease develops during life in 5-10% of people, approximately half of them experience an exacerbation within 5 years. According to M.M. Boger, with peptic ulcer disease, the frequency of complications in the form of bleeding was noted in 17.7% of cases [2]. These complications of peptic ulcer disease are often observed during a long course of the disease and can be acute or chronic in nature. Acute bleeding can be caused by disorders of the blood coagulation system and occurs in the presence of exacerbation of peptic ulcer disease [3].

In recent years, it has been noted that the main components of the pathogenesis of peptic ulcer disease (cortical, humoral, vascular, metabolic, immunological, acid-peptic aggression, impaired motility, bacterial influences) are mediated through microcirculatory disorders, hypoxia and the development of destructive processes [4].

The autonomic nervous system, being under the constant influence of the cerebral cortex, is the main regulator of all physiological processes in the body. It has now become obvious that neuropsychic factors have a negative impact on the state of internal organs through the autonomic nervous system [5]. In pathological conditions, there is a high probability of developing persistent autonomic disorders, since the abdominal organs are innervated by a wide network of independent autonomic fibers originating from a number of strip autonomic ganglia (celiac ganglion, mesenteric ganglia, epigastric ganglion) [6].

There are works in the literature that highlight the features of functional disorders of the autonomic nervous system in peptic ulcer disease [6]. Scientists come to the conclusion that psychovegetative disorders play a certain role in the formation of the clinical picture of the disease and influence its course. When describing

the state of the cholinergic and sympathetic-adrenal systems in peptic ulcer disease, it was noted that the disruption of the mechanisms of nervous regulation of the gastroduodenal system is determined by the nature of the relationship between the two main mediators - cholinergic and adrenergic, which can be antagonistic and synergistic in nature [7].

Materials and methods. We analyzed the frequency-amplitude characteristics of the alpha rhythm, as well as the severity of the galvanic skin response (GSR) at rest, as well as against the background of mental stress. The mental load was mental arithmetic with continuous calculation from 100 by 3 for one minute. During this minute, all alpha rhythm indicators were analyzed. The galvanic skin reflex was analyzed by culvimetry, whereby the envelopes of the galvanic skin response were measured in millimeters in three epochs of standard recording, that is, during one minute of recording. Polygraphic recording during mental load was carried out at a speed of 15 mm per second; the data obtained on the state of nonspecific brain systems in groups of patients with peptic ulcer disease and in the control group are presented in Table 1. The table shows that, according to the average indicators of α-rhythm frequency and α-rhythm amplitude, there are no significant differences between the groups. As for the α-index, it turned out that in the 1st group of patients with peptic ulcer disease, the initial α-index was significantly lower than in the control group. It can also be noted that in the 1st group of patients, there is a slight tendency to increase galvanic skin activity compared to the control group. At the same time, a comparison of these two groups, depending on the severity of the clinical course, shows that the brighter the picture of the disease, the higher the average frequency of the α rhythm, the lower the α index, the lower the average amplitude of the α rhythm and the higher the power of galvanic skin reactions according to culvimetry data. At the same time, the differences in the average frequency of the α-rhythm between the compared groups are statistically significant. You can also pay attention to the fact that the indicators of patients in group 1, for all the studied indicators, i.e. the average frequency of the α rhythm, the average amplitude, the average α index and the power of galvanic skin reactions were significantly different from the control group. All this indicates that the level of ascending brain activation at rest is higher in the presence of a pronounced clinical course. The severity of peripheral autonomic activation, indicated by the galvanic skin reflex, is also more intense.

Results and discussions. Very interesting data were obtained by analyzing the reactivity of the frequency-amplitude characteristics of the α-rhythm and the galvanic skin reflex against the background of mental stress.

As can be seen from the presented data, if in the control group of patients against the background of mental stress there is an adequate increase in the α-rhythm frequency, a decrease in amplitude, a decrease in the α-index and an increase in GSR power, i.e. There is a usual normal reaction of EEG desynchronization and autonomic activation in the periphery, then in patients of group 1, these shifts have a slightly different direction. First of all, it is noteworthy that against the background of mental stress in the subjects of this group, there is practically no increase in the average frequency of the α rhythm. The degree of severity of reduction in the amplitude of the α rhythm, as well as the α index, was significantly less in terms of reactivity in comparison with the control group. The intensity of GSR activity also tends to be less pronounced compared to the control group, but without significant differences ($p<0.05$). Analysis of the studied parameters between the 1st and 2nd groups of patients with peptic ulcer disease showed that, in general, the trend identified in the 1st group persists.

Table 1. The state of ISM in patients with peptic ulcer disease depending on the severity of the clinical course

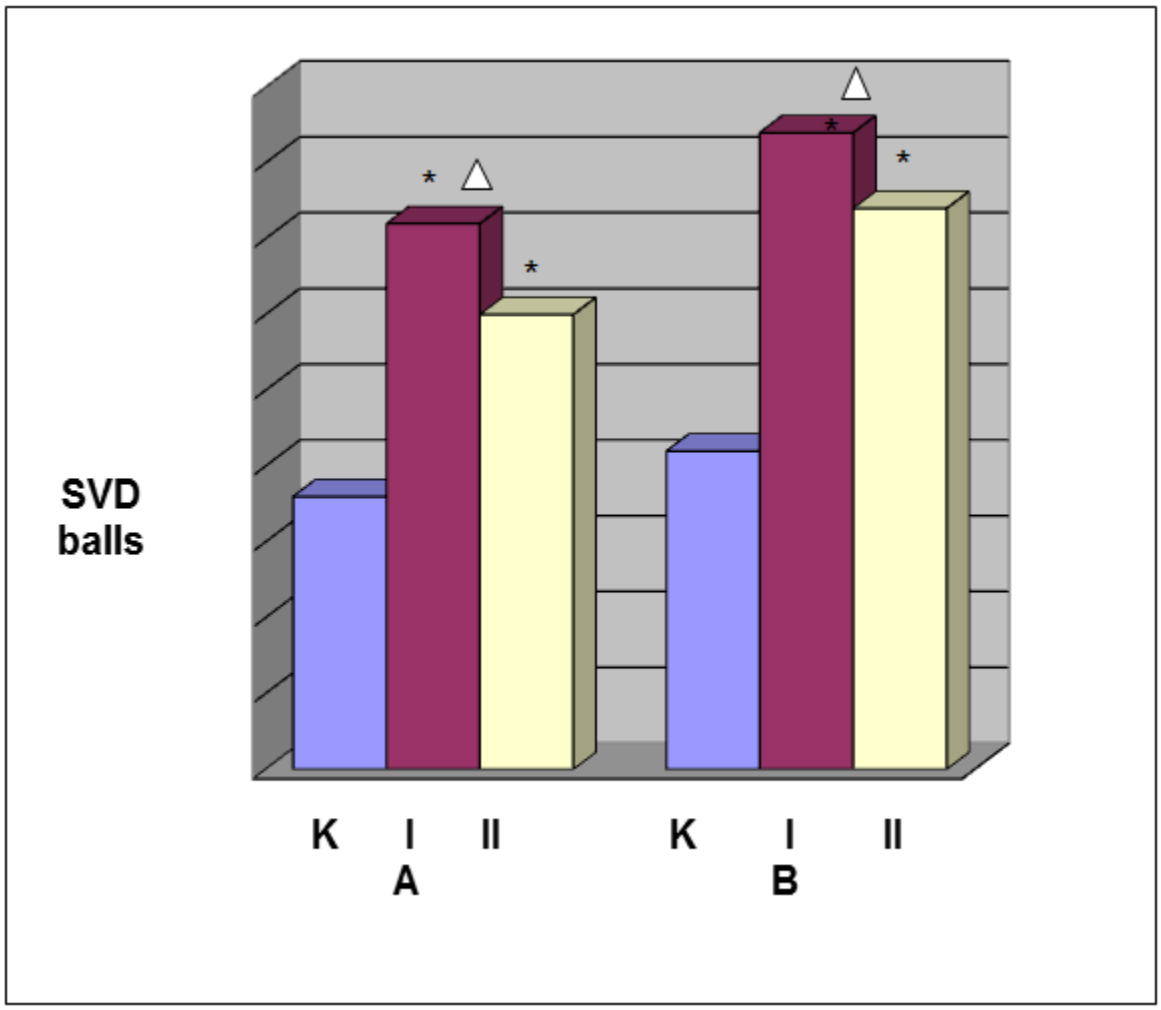
Indocator	Control group (n=26)	Patients with peptic ulcer	
		1 st group (n=70)	2 nd group (n=70)
Background Medium α-rhythm frequency	9,4	9,6	9,9**
Med. ampl. α-rhythm	56,3	52,1	50,4*
Med. α-index	48,2	39,3*	37,7*
Galvanic skin response	307,5	318,3	326,3*
Reactivity at UN α-rhythm frequency	9,75 (+3,7)	9,6 (*0)	9,8 (-1,1**)
amplitude α-rhythm	49,8(--11,5)	48,6 (-6,7*)	48,4(-4*)
α-index	40,0 (-17)	38,1 (-3,1*)	40,2 (+6,6**)
Galvanic skin response	335,1 (+9)	342,2 (+7,5)	345,3 (+5,8*)

Note: * - significance of differences with the control group;

**- significance of differences between groups ($p<0.05$). Reactivity indicators (in%) during mental load are indicated in parentheses.

The results of the study of the state of the ANS showed that in all patients, compared with the control group, according to the examination using questionnaires and charts, there were clear signs of SVD, the severity of which in the 1st group was significantly higher than in the 2nd group, both according to the questionnaire, and according to the scheme (Fig. 1). At the same time, the severity of SVD in both groups significantly exceeded the data in the control group ($p <0.05$). The results of the study of the state of autonomic tone, reactivity and support of activity are shown in the table, from which it can be seen that patients in the 1st group were characterized by significantly expressed initial autonomic parasympathicotonia, while in the 2nd group normotonia was noted ($p <0.05$). Studies of autonomic reactivity according to the Danigny-Aschner test revealed that in patients of group 1 there is a predominantly sympathetic orientation of autonomic reactivity, which is expressed in the form of a significantly lower degree of decrease in heart rate in the test compared to the control group. At the same time, patients in group 2 showed normal autonomic reactivity. The results of the study of autonomic support of physical activity according to the ortho-clinostatic test revealed that in group 1 there is a clear insufficiency of autonomic support of activity in the orthotest, both according to the dynamics of heart rate and blood pressure. In group 2, a reverse trend was revealed with signs of redundancy of vegetative support for activity. According to the test data, this is expressed as a significantly lower reactivity of heart rate and blood pressure in group 1 and greater reactivity in group 2, compared to the control. Intergroup comparisons show clear, significant differences between groups of patients ($p<0.05$). Psychological testing using the Spielberger test (Fig. 3.4.2) revealed signs of an increase in the level of anxiety in the emotional sphere in both groups, with a slight predominance of the severity score in patients of group 1. At the same time, significant differences were revealed between the groups in terms of personal anxiety indicators ($p<0.05$).

Fig.1 Score severity of SVD in the control (C) group and in patients of groups I and II



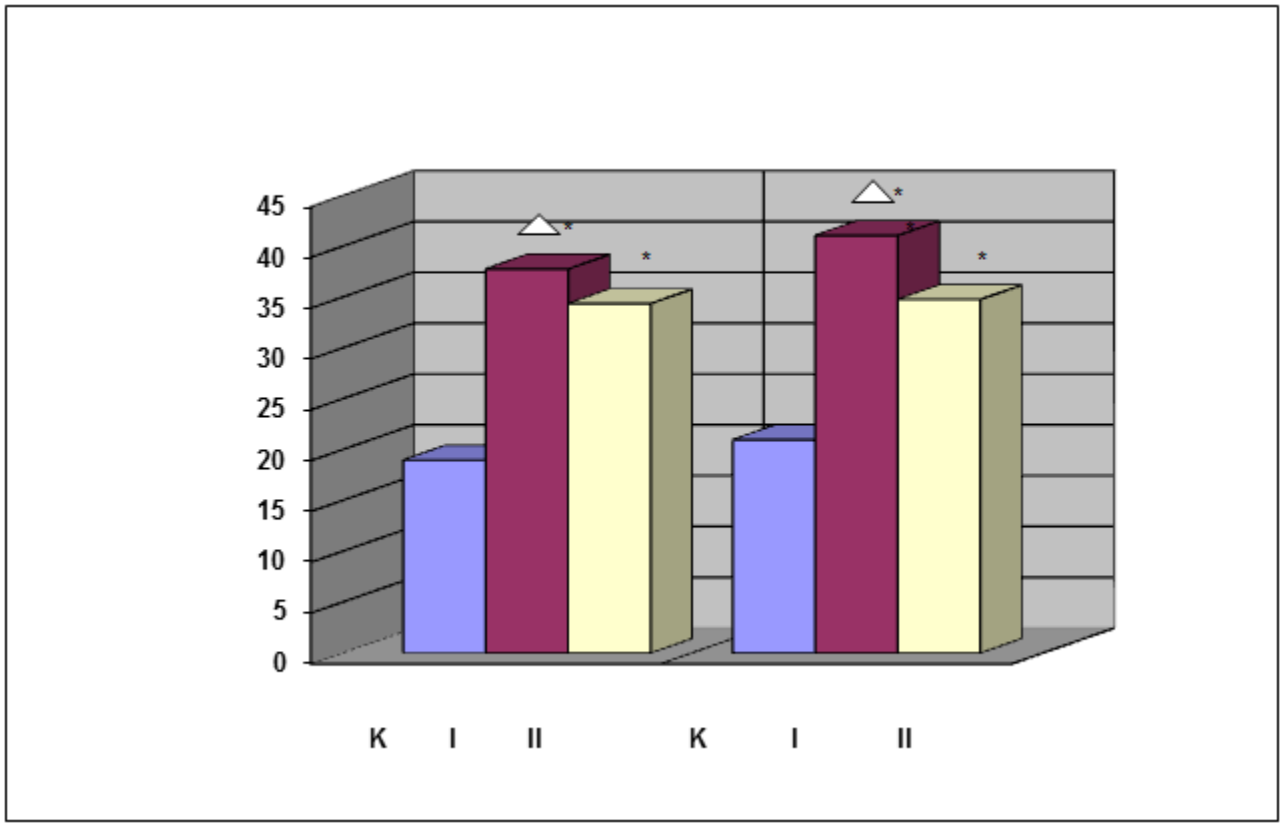
Note:A- questionnaire data, B- questionnaire data;

Mark *- significance of differences with the control group;

MarkΔ - reliability of differences between groups of patients (p< 0,05)

According to the MIL test (Fig. 2), differences between the compared groups were also established. At the same time, in patients of group 1, the leading peak of the profile exceeding the boundaries of the conventional psychological norm was identified on the scale of hypochondria and depression, which indicates the somatization of anxiety. In the same group, a moderate rise in the profile on the 8th scale was revealed, which indicates an autistic personality with a unique mode of thinking and behavior. In patients of group 2, a different configuration was revealed with the formation of the so-called “conversion five” on the scales of the neurotic triad, which indicates the repression of anxiety with a tendency towards demonstrative behavior.

Fig.2 Indicators of reactive (A) and personal (B) anxiety in the control (C) group and in patients of groups I and II



Conclusion. Thus, the data obtained indicate that patients with peptic ulcer develop psycho-vegetative disorders, the nature and severity of which depend on the course of the disease. It has been established that the basis of the syndrome of vegetative dystonia in the case of a chronic course of the disease with frequent exacerbations is high anxiety with autonomic disorders, predominantly of a parasympathetic nature. In this case, we can note the dissociated nature of autonomic disorders, manifested in the form of a sympathetic orientation of autonomic reactivity against the background of initial parasympathicotonia and insufficiency of autonomic support of activity. With a relatively favorable course of the disease, unidirectional dynamics of psycho-vegetative indicators with moderate severity of anxiety, a tendency to repress anxiety against the background of vegetative sympathicotonia and a relative redundancy of vegetative support of activity are characteristic.

The data obtained show that one of the mechanisms of peptic ulcer chronicization is the formation of dissociation between autonomic and emotional disorders, where high anxiety is combined with autonomic parasympathicotonia and insufficiency of autonomic support of activity. From a practical point of view, these data once again show the need for the treatment of peptic ulcers to prescribe tranquilizers, antidepressants, and in the case of a chronic course of the disease, vegetotropic drugs with a tonic effect.

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