

<https://doi.org/10.29013/ESR-21-9.10-17-19>

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## USE OF IMMUNOCORRECTION IN PATIENTS WITH DUODENAL ULCER

**Abstract.** The values of the immune system (SI) were determined in 52 patients with chronic duodenal ulcer (CDU) and in 27 healthy individuals in patients of 2 groups noted deep suppression of the total pool of T(CD3)-lymphocytes, its subpopulations, inversion of the immunoregulation index, as well as the stress of the humoral component of SI. Conventional methods of treatment did not lead to the elimination of immune disorders in patients of the 1st group with CDU.

Included in the treatment regimen of the 2<sup>nd</sup> group CDU domestic immunopreparat Thymoptinum had a beneficial effect on immune parameters and condition of patients. It effectively eliminated immune disorders, increased all links of T – and B-cell immunity, had immunocorrecting and eradication effect.

**Keywords:** peptic ulcer, duodenum, immune system, Thymoptinum, Helicobacter pylori, immune deficiency, eradication, immunocorrective.

It is known that the etiology and pathogenesis of duodenal ulcer (DU) is closely related to Helicobacter pylori (HP) infection. At the same time, the researchers revealed damage to the mucous membrane of the duodenum and its colonization with cytotoxic strains of HP. With a sharp decrease in the immunoreactivity of DU patients, the manifestation of the cytotoxic properties of HP occurs, i.e. HP infection is involved in immune processes in patients with the above pathology [1–6].

**The purpose of the study:** to study the immune system (IS) in patients with chronic DU (CDU) and to study the effects of immunostimulating therapy (IST) and anti-Helicobacter therapy (AHBT).

**Materials and methods.** IS parameters were studied in 52 patients with a diagnosis of CDU aged 33 to 54 years. 34 patients were male (65.4%), 18 (34.6%) were female. The duration of peptic ulcer was  $5.6 \pm 2.7$  years. The average size was  $1.4 \pm 0.5$  cm.

Patients, depending on the treatment performed, were randomized into 2 representative groups. There were 28 patients in the 1st group and they received CUD from omeprazole (40 mg/day), de-nol (480 mg/day), tinidazole (1500 mg/day) for tech. 12–14 days; The 2<sup>nd</sup> group (24 patients) received a therapy regimen similar to the 1<sup>st</sup> group, but it also included the immunodrug Thimoptinum (Uzbekistan) (1 ml of 0.01% solution subcutaneously every other day; for a course of 10–12 infusions) as an additional means of treatment and immunocorrection.

When determining the main parameters of the cellular component of IS, monoclonal antibodies to the surface cluster of CD receptors (Sorbent-Servis LLC, Russia) were used: T-lymphocytes with the CD3 phenotype; T-helpers with the CD4 phenotype; T-suppressors with the CD8 marker; B-lymphocytes with the marker CD19, also the immunoregulation index (IRI) is the ratio of CD4/CD8. The levels of serum

immunoglobulins (SI) – Ig – classes A, M and G were assessed by the method of double radial immunodiffusion according to Mancini (1968). Immune parameters were determined before and after 1 month of treatment. The control group for comparison of immunological parameters consisted of 27 healthy individuals (21–52 years old).

**Results and discussion.** The conducted studies indicated that the exacerbation of CUD led to immunosuppression of the total pool of CD3-lymphocytes up to  $38.6 \pm 1.8\%$  at a rate of  $52.4 \pm 1.9\%$ . We demonstrated lower values of T cells with the CD3 phenotype in the 1st group, in contrast to the 2nd group of patients. In two representative groups, disturbances in the functioning of T-lymphocyte subpopulations were observed in the form of imbalance and inversion of IRI. At the same time, a decrease in the level of T-helpers with the CD4 phenotype and an increase in the number of Ts(CD8) was noted; also verified a statistically significant decrease in IRI to 1.3 ( $p < 0.01$ ) due to a decrease in the relative proportion of Th(CD4).

With regard to the production of B(CD19)-lymphocytes, one can also state their noticeable decrease to  $12.3 \pm 1.5\%$  (the norm is  $14.8 \pm 1.1\%$ ), which, of course, indicates a noticeable decrease in most cellular parameters of immunoreactivity in patients with CUD.

In the acute phase of CUD in patients of two groups, a decrease in two parameters of humoral immunity, namely IgA and IgM, was noted. At the same time, there was a tendency to increase the production of antibodies of class G – IgG –  $15.27 \pm 1.6$  g/l at different levels of significance –  $p < 0.01$  in the 1<sup>st</sup>;  $p < 0.001$  in the 2<sup>nd</sup> group, which directly indicates a disorder of the immune system in the humoral link of immunity.

We found that healing and / or scarring of the ulcer in a short time with successful AHBT and effective HP eradication was achieved in the 2nd group,

where the eradication efficiency (EE) was 76% in  $16.7 \pm 0.9$  days, and in the 1st EE group was low – 58% and it was achieved in  $27.3 \pm 1.8$  days.

At the same time, we note a decrease in the number of lymphocytes in the same group 1, where the level of T-lymphocytes with the CD3 marker was reduced to  $41.5 \pm 1.6\%$ , helper fraction Th(CD4) ( $p < 0.01$ ) was also reduced against the background of high values of suppressor cells – Ts(CD8). A decrease in IRI to 1.5 at a rate of 2.1 indicates an imbalance in the CD4/CD8 ratio in patients with ineffective eradication.

In patients of the 2<sup>nd</sup> group who took IST, a significant increase in the total pool of lymphocytes T(CD3) was observed: up to  $64.3 \pm 2.4\%$ , B(CD19) up to  $18.5 \pm 1.7\%$  with a parallel increase in Th(CD4) and IRI up to 2.4 (norm 2.1), which was, of course, higher than similar values in the 1st group with a high level of significance ( $p < 0.001$ ).

It is likely that the marked positive shift in the functioning of the T-cell component of immunity (an increase in the levels of CD3, CD4 and a decrease in the proportion of CD8) IST makes its own adjustments to the processes of HP eradication in the 2<sup>nd</sup> group.

Moreover, in this group, there was an increase in B-lymphocytes (CD19) and IgA levels to  $2.8 \pm 0.64$  g/l compared with pre-treatment data of  $2.2 \pm 0.29$  g/l ( $p < 0.001$ ).

Summarizing the above data, it can be concluded that CUD in the relapse stage is characterized by a significant depression of the majority of SI with high HP infection of the duodenal mucosa. Criteria for ineffective or ineffective eradication are depressive processes in the immune system of patients with CUD. Conversely, the remission of patients with CUD of the 2<sup>nd</sup> group was accompanied by a significant increase in cellular humoral immunity, which, apparently, contributed to the improvement of treatment results in them.

**References:**

1. Vasilevsky I. V. New approaches to the eradication of *Helicobacter pylori* using nifuroxazide // International Reviews: Clinical Practice and Health.– No. 1. 2013.– P. 8–14. (In Russian).
2. Dudnikova E. V., Shestopalova M. A. The role of *Helicobacter pylori* in the etiology and pathogenesis of chronic gastroduodenal pathology // Med. vestn. South of Russia.– No. 3. 2011.– P. 4–7. (In Russian).
3. Suleymanov S. F. The immune status in patients of duodenal ulcer disease and influence on its eradication and immunomodulatory therapy // European Science.– Vol 32.– No. 10. 2017.– P. 53–56.
4. Suleymanov S. F. The use of immunocorrective and eradication therapy in patients with duodenal ulcer // Journal of Theoretical and Clinical Medicine.– No. 4. 2018.– P. 117–118. (In Russian).
5. Suleymanov S. F., Kodirov M. D., Usmonova N. S., Sharipova D. Sh. Immunocorrective therapy in patients with duodenal ulcer // Questions of science and education.– No. 27 (39). 2018.– P. 117–119.
6. Suleymanov S. F. Analysis of the degree of immune disorders and the application of immunocorrectors in diseases of digestive system // European Science Review.– Vienna, Austria.– No. 9–10. September–October. 2021.– P. 12–15.