Efficiency of combined antisecretory preparation Ezolong in a treatment of gastroesophageal reflux disease

N. B. Gubergtrits, P. G. Fomenko, G. M. Lukashevich, O. A. Golubova,
E. N. Stanislavskaya
Donetsk National Medical University n. a. M. Gorky, Ukraine
Donetsk Regional Clinical Territorial Medical Union, Ukraine

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The authors presented literature data and results of their research in which they assessed efficiency and safety of Ezolong in a treatment of gastroesophageal reflux disease. Obtained results confirm high efficiency, good tolerance and low frequency of adverse effects of Ezolong.

Gastroesophageal reflux disease (GERD) - is one of the most common serious diseases of the digestive system that can significantly impair the quality of life of patients with progression. GERD leads to the development of dangerous complications, including Barrett's esophagus and adenocarcinoma of the esophagus and later [3, 25]. GERD in the general population is found in 20.0% of cases and has a tendency to increase in prevalence [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**].

GERD - a chronic relapsing disease, manifested by characteristic clinical signs and resulting in spontaneous, regular and consistent retrograde "reflux" (reflux), stomach acid and / or alkaline duodenal contents into the esophagus from damage of the distal (inflammation, erosion, peptic ulcer) [**Ошибка! Источник ссылки не найден.**].

Gastroesophageal reflux can be not an individual disease, but a sign (eg, peptic ulcer) [**Ошибка! Источник ссылки не найден.**].

Goals of GERD treatment [**Ошибка! Источник ссылки не найден.**]:

- elimination of complaints, improving the quality of patients life, the risk factors;
- improving of histology lining of esophagus, cuticularization of erosions and ulcers;
- prevention of complications, lengthening of remission.

Treatment should start with recommendations for lifestyle changes:

- to sleep with raised head no less than 15 cm of the bed. But put more pillows is not correct, because there is bending of the trunk and gastric content is difficult to pass in the right direction. On the contrary, there is an increase of the gastro esophageal reflux disease risk. It is more correct to put thing height of 10-15 cm over the bed beneath the head. In this case the patient's body will be located obliquely and risk of reflux will be reduced;
- after a meal to avoid leaning forward. Gastroesophageal reflux, the symptom of "laces" is provoked with these slopes ". Therefore, you must also avoid wearing shoes with laces;
- do not wear tight clothes, tight belts, corsets, bandages;
- avoid heavy lifting more than 8-10 kg, overexertion of abdominals and work associated with trunk bending forward;
- to cut down smoking;
- to fight with overweight;
- to avoid medication deacreasing the tone of the lower esophageal sphincter and provoking gastroesophageal reflux disease (methylxanthines, anticholinergics, nitrates, β-blockers, calcium antagonists, myotropic antispasmodic, narcotic analgesics, oral contraceptives, antidepressants, progesterone, etc.) and deacrising the

protective properties of the esophageal mucosa (non-steroidal anti-inflammatory drug, quinidine, etc.);

- to have a meal at least 2-3 hours before bedtime, preferably after a meal do not go to bed and take a short walk;
- to avoid taking cold, fizzy drinks, strong coffee, fat, spicy, acidic foods, chocolate.

There are two basic tactics at medical treatment of GERD [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**]:

- to start treatment with antisecretory applying of the most powerful remedies - proton pump inhibitors (PPIs) - a standard double or therapeutic dosage, and after achieving a clinical effect PPIs dose is reduced to a maintenance — (step-down therapy);
- gradually growing therapy is prescribed using antacid sequentially, while they are ineffective - blockers H2 histamine receptors and finally IPP (step-up therapy).

Antisecretory therapy should be accompanied by a prokinetic (metoclopramide, domperidone, itopride and others).

Ukraine pharmaceutical market is home to a number of PPI: omeprazole, lansoprazole, pantoprazole, rabeprazole, esomeprazole. Each of these has its own characteristics API.

Ezolong drug is a combination of 20 mg of esomeprazole and 40 mg of sodium bicarbonate and antacid 1080 mg.

We chose Ezolong as a main component, comprising esomeprazole, for several reasons in our research. First of all, proton pump inhibitors (PPIs) and not H2 blockers of histamine receptors should be used for the treatment of GERD. PPI only ensures compliance with the rules of Bella: "For the healing of ulcers and erosions in the treatment of GERD intraesophageal pH> 4 should be supported by most of the day" [24]. Secondly, esomeprazole has several advantages compared with the pharmacokinetics of omeprazole.

Esomeprazole is an enantiomer (optical isomer) of omeprazole, esomeprazole - levogyrate isomer of omeprazole (S-isomere). It is shown that the S-isomers IPP have significant advantages over their pharmacokinetics R-isomers and mixtures of the R-and S-isomers [9, 39, 40]. At the same time, those APIs that are currently used in practice are such mixtures. But only for omeprazole was managed to create a stable optical S-isomer - esomeprazole. Esomeprazole is stable as any formulation - as to receive per os, and for intravenous administration [9, 33]. In a study of T. Anderson et al. (2000) [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**] 12 healthy volunteers have shown that taking esomeprazole 20 mg daily for 5 days to 70% higher area under the curve, "concentration-time" than omeprazole in the same dose over the same period. In another double-blind study, T. Lind et al. (2000) [9, 28] with 36 patients was also demonstrated that the mean values of the area under the curve "concentration-time" on the 5th day of esomeprazole receiving a daily dose of 40 mg and 20 were 2 and 5 times higher than for a similar receiving omeprazole 20 mg per day. It is explained by the fact that esomeprazole less than omeprazole undergoes hydroxylation with cytochrome P450 (CYP2C19) in the liver and has a smaller clearance than the R-isomer of omeprazole [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**]. It also explains why a large area under the curve peak blood concentration (PAC) of esomeprazole highest dose compared with a similar area under the curve of omeprazole (Figure. 1, 2) [**Ошибка! Источник ссылки не найден.**].

The property of esomeprazole is to be less metabolized by the cytochrome P450 is fundamentally differs drug from other PPIs. In the population there is polymorphism CYP2C19. In Caucasian only 2.5% have a gene structure and cytochrome P450 metabolism favorable to the PPI and the rest metabolize these funds quickly to varying degrees. All this does not allow predicting with greater accuracy the effectiveness of PPIs and explains the presence of patients resistant to these drugs. Only the creation of esomeprazole was allowed to overcome this

deficiency [9]. Advantages of metabolism esomeprazole compared with omeprazole shown in Fig. 3.

The pharmacokinetics of esomeprazole can confidently say that there is no need to adjust the dose in the elderly with mild and moderate hepatic dysfunction [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**]. Esomeprazole has the same profile of interaction with other drugs, as omeprazole, and for certain groups of products even better [**Ошибка! Источник ссылки не найден.**].

Esomeprazole has advantages over omeprazole in relation to pharmacodynamics. Antisecretory effect of esomeprazole is dose-addicitve. Esomeprazole at 20 and 40 mg daily for 5 days maintained intragastric pH> 4.0 for significantly longer period of time than omeprazole 20mg daily has been demonstrated in a double-blind crossover study in 36 patients with GERD. So, with time intragastric pH> 4.0 taking esomeprazole 40 mg was 70% during the day, esomeprazole 20 mg - 53%, omeprazole 20 mg - 44% [9, 28]. Furthermore, in a study of 115 patients with GERD have shown that a daily intake of 40 mg of esomeprazole support intragastric pH> 4.0 for a longer period of days than omeprazole 40mg. Percentage of time of day with a pH of> 4.0 in the first day of admission were 48.6% and 40,6% (p <0.001) of esomeprazole and omeprazole, properly. On the 5 th day figures were 68.4% and 62.0%. On the 5th day of admission 88.0% of patients in the esomeprazole group, and 77.0% were treated with omeprazole, intragastric pH> 4.0 was maintained for more than 12 hours. In relation to treatment daily dose of esomeprazole 40 mg dose is selected [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**].

Antisecretory effect of esomeprazole has advantages not only in comparison with Omeprazole, but with the standard daily doses of other PPI (lansoprazole, pantoprazole, rabeprazole). Esomeprazole is more effective in controlling gastric acid secretion in comparison with other PPIs using not only the standard, but also maintenance doses of drugs.

In accordance with the advantages of the pharmacokinetics and pharmacodynamics of esomeprazole, it has a high clinical efficacy:

– the effectiveness of eradication Helicobacter pylori (Hp) is a scheme in triple therapy with esomeprazole - 91.7% (meta-analysis of five randomized, double-blind, controlled tests) [**Ошибка! Источник ссылки не найден.**];
– treatment with esomeprazole 40 mg / day scarring 90.0% of duodenal ulcers is achieved in 4 weeks [**Ошибка! Источник ссылки не найден.**];
– healing of esophagitis with esomeprazole in the treatment of 40 mg / day for 4 weeks - 78% of patients within 8 weeks - 93% [**Ошибка! Источник ссылки не найден.**].

Ezolong contains sodium bicarbonate which provides fast acid neutralizing effect, which achieves the destruction of heartburn and pain during the first minutes of treatment. In addition, due to the fast acidneutralization esomeprazole does not need acid protecting of the capsule and therefore rapidly absorbs into the bloodstream and blocks the proton pump.

In the works of the past two decades, antacids "rehabilitated" in many positions. It turned out that even on the background of monotherapy antacids achieve a high rate of healing of duodenal ulcers. Currently, antacids are experiencing a renaissance [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**].

Acting as the base, antacids can raise the pH in the stomach more than 4, and sodium bicarbonate - to 7. Reducing the acidity inhibits peptic activity of gastric juice

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But, it is important to remember about the side effects of sodium bicarbonate, which include systemic alkalosis and the probability of occurrence or worsening edema syndrome due to sodium retention (it should be considered in patients with heart failure, hypertension, kidney disease, cirrhosis of the liver); excretion of sodium bicarbonate leads to alkalization of urine, which may contribute to the development of phosphate nephrolithiasis, flatulence and belching

may be due to the formation of carbon dioxide [**Ошибка! Источник ссылки не найден.**]. Receiving sodium bicarbonate there is a "rebound" increase in acid production by stimulating gastrin-secreting cells [12]. Intensely neutralizing hydrochloric acid, sodium bicarbonate has short duration of action [**Ошибка! Источник ссылки не найден.**].

It is important to know, that sodium hydrogen reacts with some drug substances, such as allopurinol, narcotic analgesics, certain antibiotics (oleandomycin, tetracyclines, erythromycin), tricyclic antidepressants, anticoagulants indirect, sulfonamides and others. In some cases this reaction has a positive effect. For example, the simultaneous intake of sodium hydrogen carbonate and allopurinol is recommended for prevention the precipitation of urate and the formation of stones [**Ошибка! Источник ссылки не найден.**].

Despite the side effects and sodium bicarbonate characteristic, it was administered in Ezolong drug for quick achievement of the effect, the mutual potentiation of drug components effects, because due to esomeprazole there is no progress of "bounce" syndrome. As a result Ezolong acts quickly, efficiently and in a sustained, as evidenced by our data set forth below.

Investigation goal: studying of efficacy and safety Ezolong in patients with GERD.

Materials and techniques

We observed 54 patients with GERD. The patients were examined and treated in the gastroenterological department of the Donetsk regional clinical Territorial Medical Association, which is the base of the Department of Internal Medicine. O. Y. Gubergrits of Donetsk National Medical University of M.Gorky.

Criteria for inclusion of patients in the investigation:

- patients in the age from 18 till 60 years old;
- the presence of clinical signs and endoscopic GERD;
- written informed consent to participate in investigation.

Exclusion criteria:

- patients younger 18 years old and older 60 years old;
- hypersensitivity to esomeprazole, sodium;
- abnormalities of hematosis in unknown etiology;
- psychic abnormalities;
- pregnancy and lactation;
- absence of clinical and endoscopic signs of GERD;
- unwillingness to cooperate in the investigation;
- severe liver and / or kidney failure.

There were 32 (59.3%) women and 22 (40.7%) men among the patients.

The age of patients ranged from 20 to 58 years.

38 (70.4%) patients had non-erosive esophagitis, 14 (25.9%) patients - erosive, 2 (3.7%) cases - erosive and ulcerative. Barrett's esophagus was detected at 3 (5.6%) patients. A hiatal hernia was diagnosed at 15 (27.8%) patients.

We also examined a control group, which consisted of 30 healthy people. Their age ranged from 28 to 59 years. The control group included 18 (60.0%) women and 12 (40.0%) men. That is, gender and age were comparable in healthy sex-and age of patients.

Examination of our patients consisted primarily of history complaint analysis, objective data as well as the general blood and urine tests, blood biochemical research, esophagogastroduodenoscopy (EGDS) with esophagus and gastric mucosa biopsy, QOL of patients. In addition, patients underwent a classic urea breath test for the diagnosis of helicobacteriosis.

To assess patients' complaints and the results of objective investigation (pain on palpation), we used indicator of moderate severity (FTAs). To calculate this indicator firstly we assessed the intensity of pain and other manifestations of comorbidity according to the following scale: 0 points - no complaints, 1 point - minimal complaints; 2 points - moderate complaints, 3 points – significant complaints or very significant. the Formula 1 FTAs was calculated after that.

(1),

where: FTA - the average severity of clinical manifestations;

a — the number of patients with significant signs at 1 point ;

b — the number of patients with significant signs at 2 points;

c — the number of patients with significant signs at 3 points;

d — the number of patients without the signs.

Quality of life was assessed by questionnaire SF-36 [**Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**, **Ошибка! Источник ссылки не найден.**].

Statistical processing of the material calculated arithmetic means (M), its error (m), and standard deviation ( ). Possible relationship between the two samples in the study for assessment of its extent is determined by the linear correlation coefficient (r) and an indirect correlation ( )

After including, the duration of treatment and monitoring of patients - 2 weeks. Written informed consent before treatment was received for taking medical history, conduct objective research FEGDS, breath test Fc, performed clinical blood and urine tests, blood chemistries (total and direct bilirubin, ALT, AST, alkaline phosphate, gammaglutamyltransferase, urea, creatinine), assessment life of quality. After 1 week of treatment objective research was performed again, as well as the registration of adverse reactions, monitoring compliance with treatment, assessment of efficacy and safety. At the end of treatment there was an objective study, FEGDS, breath test for Hp, clinical blood and urine tests, blood chemistry, recording adverse events, monitoring of compliance with treatment, assessment of efficacy and safety, quality of life. In addition, all patients before treatment and after treatment only patients with erosive and ulcerative changes in the esophageal mucosa and Barrett's esophagus were taken biopsy. For estimation of the morphological changes of the mucous membrane of the esophagus (SOP)

tissue sections were tincted with hematoxylin and eosin staining and mucin was tincted using PAS-reaction.

Depending on the treatment, the patients were divided into 2 groups: the main group and the comparison group. A comparison group included 26 patients who received the basic therapy only (lifestyle modification, diet Motilium 1 tablet 3 times daily, omeprazole 20 mg 2 times daily). The patients of the main group (28 patients) instead of omeprazole have taken Ezolong 40 mg per day.

Patients of both groups, which have Fc revealed, in addition to therapy for GERD Flemoxin 1,0 were administered 2 times a day and Klatsid 500 mg 2 times a day for 10 days.

The patient groups were matched according to sex, age of patients, prescription of GERD, the frequency of comorbidity.

Results

All patients were bothered by dyspeptic symptoms. They were significant in 26 (48.1%) patients, moderate - in 21 (38.9%) patients, minimal - in 7 (13.0%) patients (Fig. 4). FTA dyspeptic syndrome was 2.35.

All patients were worried with heartburn, and 30 (55.6%) patients also pointed to the acid regurgitation. Belching air, eaten food hassled 36 (66.7%) patients. Nausea troubled 28 (51.9%) patients, and vomiting without relief - 10 (18.5%) patients. Among the abnormalities motion prevailing tendency to constipation in 19 (35.2%) patients. Diarrhea worried 6 (11.1%) patients, alternating constipation and diarrhea - 14 (25.9%) patients. Normal motion occurred in 15 (27.8%) patients. Bloating, rumbling in the abdomen noted 16 (29.6%) patients.

FTA asthenoneurotic syndrome, which was diagnosed in 44 (81.5%) patients was 1.41. This syndrome is manifested by general weakness, malaise, irritability, sleep disturbances.

From history we found out that the prescription of heartburn as a major sign of GERD ranged from 1 year to 15 years.

An objective status reveal of all patients was satisfactory. The skin and mucous membranes were normal color. The tongue was coated whitish, grayish bloom in 49 (90.7%) patients, and teeth imprints on the edges of the tongue were detected in 38 (70.4%) patients.

An objective examination of the chest there were no detected significant changes. Indices of heart rate and blood pressure fluctuated within the normal range.

Abdomen was soft, painless at a superficial palpation in all patients. With deep palpation mild diffuse epigastric tenderness was noted in 18 (33.3%) patients. In 16 (29.6%) patients had pain under the xiphoid process, which increases with finger pressure under it. Significant changes on palpation of the liver were found, the spleen is not palpable at a single patient.

Due to the fact that all examined patients have had GERD, changes of the esophagus by endoscopy were detected in all patients (patients with endoscopy-negative GERD in the study were not included). All patients were revealed hyperemia and edema of the SOP greater in the lower third. 38 (70.3%) patients had non-erosive esophagitis, 14 (25.9%) patients had erosions DIS; 2 patients (3.7%) patients - even the pestilence, and the erosion of the mucous. Endoscopic Barrett's esophagus was suspected in 3 (5.6%) patients, and the diagnosis was confirmed histologically. At endoscopy gaping cardia was found in 38 (70.4%) patients. 15 (27.8%) patients were determined by prolapse of the gastric mucosa (GM), which was classified as having a hiatal hernia. 19 (35.2%) patients with endoscopy was detected duodenal reflux. It can be assumed that due to the presence of GERD patients in a number of cases this was not only a reflux of duodenogastric but duodenogastroesophageal. Our hypothesis is supported by the fact that at the time of endoscopy in 13 (24.1%) patients was determined by the contents of the esophagus, bile-colored.

Among the 16 (29.6%) patients with erosive and erosive ulcerative changes in the SOP 7 (13.0%) patients were diagnosed with erosive esophagitis grade A,

and 5 (9.3%) patients - grade B, 2 patients (3, 7%) patients - grade C, in 2 (3.7%) patients - D degree at the Los Angeles classification (Figure 5) [5].

Patients with non-erosive esophagitis, histological examination revealed signs of chronic inflammation with proliferation of the epithelium, acanthosis of its small focal infiltration, predominantly lymphocytic and single lymphocytes, histiocytes (Figure 6).

In cases of esophageal ulcers mucosal defects were observed with fluid having a large number of polymorphonuclear leukocytes on the surface of the defect and of the granulation tissue in the ulcer bottom, where it was also much infiltrate of lymphocytes (Figure7,8). The accumulation of polymorphonuclear leukocytes is evidence of exacerbation of the process, whereas the growth of fibrous connective tissue is a manifestation of the chronic course of ulcer. In three cases there was a partial epithelialization of ulcers, thin layer of epithelium with the presence of mitosis in cells increase in their nuclear-cytoplasmic ratio on one of side surface of the granulation or young fibrous connective tissue, which shows the immaturity of the epithelium. Thus, chronic ulcer healing, sometimes was accompanied by superimposing with crept on the bottom of the young defect, with signs of regeneration of the epithelium.

Alternation of SOP damage at reflux of gastric contents, or the contents of the duodenum with the processes of regeneration and healing of ulcers create the conditions for the emergence of Barrett's esophagus. The presence of columnar epithelium, which is located in the distal esophagus above the lower sphincter it is called Barrett's esophagus[**Ошибка! Источник ссылки не найден.**]. There are many clinical and experimental evidence that these changes are the result of ulceration with the following re-epithelialization of columnar epithelium in the background of non-squamous stratified squamous epithelium [34], it is a metaplasia of the epithelium. Cylindrical epithelium is more adapted to gastric or intestinal secretions while duodenogastric and gastroesophageal reflux, so mucosal stem cells arise phenotypic changes and the formation of intestinal epithelial goblet cells with [41] or gastric epithelium [**Ошибка! Источник ссылки не найден.**].

Barrett's esophagus occurs when gastroesophageal reflux in approximately 10% of patients with ulcers [26].

In biopsies of our patients has been a change in the coolant SOP (Fig. 9, 10), which also accounts for the significant inflammation, even with the formation of lymphoid follicles. Barrett's esophagus is diagnosed in 3 (5.6%) patients.

PAS-reaction it identified the accumulation of mucin in the columnar epithelium of the stomach and glycogen granules in the stratified epithelium of the esophagus (Figure 11).

Sometimes the coolant in the esophagus preserved not only cover-patching, but the glandular epithelium. Gastric gland which have the structure and function of the pyloric glands were located beneath the epithelium of the esophagus and, maintaining their morphological and functional characteristics (Fig. 12, 13).

According to the literature, after antireflux therapy regression of changes characteristic of Barrett's esophagus is possible [**Ошибка! Источник ссылки не найден.**].

With the help of the classical breath test Fc was detected in 22 (40.7%) patients. The results of clinical blood and urine tests, biochemical blood tests of significant changes in the patients examined were not revealed.

To assess the quality of life of the patients we used the SF-36 questionnaire. Results of the study of quality of life are presented in Fig. 14.

At admission patients with GERD were significantly reduced all measures that relate to the characteristics of the physical health. The most discount rate was pain. Patients had 19,5 ± 2,8 points, while the healthy - 72,2 ± 1,9 points ($p < 0,05$). The rate of total health was also significantly reduced. Patients' index was reduced up to 33,2 ± 1,8 score, control group - 70,2 ± 0,8 points ($p < 0,05$). Indicator of physical functioning in patients was reduced to 32,4 ± 2,1 points, and the index of role physical functioning to 29,5 ± 2,3 points, whereas healthy peolple these figures were 75,7 ± 2,1 points and 71 8 ± 2,8 points (both $p < 0,05$).

Mental health component indicator the most reduced was viability indicator. Patients with GERD this index was 27,3 ± 1,2 total score in the control group -

74,8 ± 2,4 score (p <0,05). Indeed, our patients had manifestations of asthenia, cancerophobia, emotional lability, hypochondria, depression, which probably also affected the viability index and other indicators of mental health on a scale of SF-36. However, the study of psychosomatic disorders was not our task. The above assumption is also confirmed by a reduction in mental health that at the examined patients was 20,7 ± 0,9 points (in the control group - 73,5 ± 1,6 points; p <0,05). Our patients often expressed the opinion that it is impossible to continue working at the same workplace, the complexity of self-respect, to perform simple everyday actions. This is probably reflected in the declining of social functioning and role emotional functioning that was reduced at patients to 29,5 ± 1,7 points and up to 32,0 ± 2,0 points (in the control group, respectively 74,5 ± 1 8 points and 73,7 ± 2,1 points; p <0,05).

Thus, in patients with GERD quality of life was significantly reduced that characterize both physical and mental health.

Indigestion conditions, including heartburn, disappeared in 15 (53.6%) patients of the main group decreased from 11 (39.2%) patients in this group remained unchanged in 1 (3.6%) patients, and increased in one (3.6%) patient. FTA dyspeptic symptoms after hospital treatment in studied group was 1.09. In the comparison group dyspeptic symptoms after treatment at the clinic had disappeared in 11 (42.3%) patients, decreased in 9 (34.6%) patients, remained unchanged in 5 (19.2%) patients and increased in 1 (3.9 %) patients. FTA dyspeptic symptoms after treatment in this group dropped to 1.38. FTA dyspepsia after therapy with Ezolonga was 1.27 times lower than after treatment with omeprazole. The frequency of extinction and reduction of dyspeptic symptoms after treatment in the study group was 1.21 times higher than in the comparison group. Conversely, the frequency of dyspeptic symptoms strengthen and preserve them after discharge from the hospital in the study group was 3.20 times lower than in the comparison group.

FTA asthenoneurotic events following treatment in the study group was 0.40, and in patients with a comparison group - 0.72, that is, the severity of fatigue

after traditional treatment was 1.80 times higher than that with our proposed therapy.

An objective reveal after treatment on the part of the chest, we detected no changes compared to the first study in any case. Epigastric tenderness and under the xiphoid process after treatment was determined by only 2 (7.1%) patients of the study group and in 4 (15.4%) patients of the comparison group.

There were no significant changes in the overall analysis of blood, urine and blood biochemical analysis.

According FEGDS in all cases non-erosive esophagitis achieved a significant improvement in both groups of patients: the reduction or disappearance of congestion, edema of the mucosa.

After the treatment of erosive esophagitis was detected in 2 (7.1%) patients of the study group and in 5 (19.2%) patients of the comparison group, erosive and ulcerative esophagitis - only 1 (3.8%) patients of the comparison group. In 1 (3.6%) patients of the main group, which at admission was diagnosed with erosive and ulcerative esophagitis, it was possible to achieve healing of ulcers and erosions (Fig. 15).

That is due to the basic treatment option healing of ulcers and erosions was achieved in 6 (21.4%) patients, and in the comparison group - in 2 (7.7%) patients. Consequently, the primary treatment option was 2.78 times more effective in the treatment of relatively erosions and ulcers peptic esophagitis was examined patients than traditional treatment.

Barrett's esophagus was diagnosed in 3 patients on admission to the clinic. Follow-up endoscopy after hospital treatment progress SOP changes are not identified in either case.

In all cases, erosive and ulcerative changes that were diagnosed before treatment, and in cases of Barrett's esophagus biopsies performed SOP before and after treatment. Example results of histological examination in the case of the healing of peptic ulcer of the esophagus in the study group is shown in Fig. 16.

According to the results of the breath test, which was performed 4 weeks after the end of treatment was found that HP eradication was achieved in 10 (90.9%) of 11 patients of the group infected with Hp. In the control group, respectively - in 8 (72.7%) of 11 patients. Therefore, the eradication of Hp for use in treatment of Ezolong reached 1.25 times more frequently than in the appointment of omeprazole.

Treatment with Ezolong had the advantage not only in the clinical, endoscopic relations, but also for improving the quality of life of patients (Fig. 17).

So, after treatment in the study group rate pain left 48,3 ± 2,5 points, a comparison group of patients - 33,4 ± 1,9 points ($p < 0,05$). Indicator of the general health was respectively 54,5 ± 1,9 points and 40,4 ± 2,1 points ($p < 0,05$). Indicator of the general health was respectively 54,5 ± 1,9 points and 40,4 ± 2,1 points ($p < 0,05$). Indicator of physical functioning after our proposed treatment options rose to 55,7 ± 2,0 points, and after conventional therapy - up to 42,4 ± 1,5 points ($p < 0,05$). Index of role physical functioning after treatment in the study group - 56,3 ± 2,3 points in the comparison group - 44,9 ± 2,7 points (Fig. 17).

Indicators of mental health were also significantly improved in the study group. Indicator of viability after treatment in the study group - 56,8 ± 1,9 points in the comparison group - 42,1 ± 2,3 points ($p < 0,05$). Indicators of social functioning and role emotional functioning in the intervention group increased to 58,5 ± 2,1 points and up to 59,6 ± 2,5 points. In the comparison group, these parameters after treatment were 41,3 ± 2,4 points and 43,8 ± 2,6 points (Fig. 17).

Thus, all the indicators of quality of life after treatment in the study group were significantly higher than in the comparison group patients.

We monitored compliance with treatment and showed no minor abnormalities only 2 (3.7%) patients. After further explanation of the need to implement the recommendations for these patients receiving drugs have to adhere to the prescribed treatment. Thus, compliance was 96.3%.

After treatment, we assessed the effectiveness of Ezolong by the doctor and the patient and assessment of the safety of the drug by the doctor.

In the study group, we noted the following side effects: allergic reactions such as hives - in 2 patients (for these patients Ezolong was canceled, they were not included in the study), headache - 1 patient (symptom was expressed moderately, not the cause of drug withdrawal), increased sweating - 1 patient (symptom was expressed moderately, did not cause discontinuation of the drug), the strengthening of burping - 1 patient (symptom was expressed moderately, did not cause discontinuation of the drug).

According to doctor opinion Ezolong has high efficiency in 92.9% of cases, modest efficacy - 7.1% of cases. According to patients, it has a high efficiency of 89.3% of cases, modest efficacy - in 10.7% of cases.

Tolerability was assessed Ezolong physician as follows: good - in 89.3% of cases, satisfactory - in 10.7% of cases.

Summary

Treatment of GERD by Ezolong contributes to the manifestation of dyspepsia is 1.27 times lower than after treatment with omeprazole. Treatment with esomeprazole 2.78 times is more effective on the treatment of esophageal erosions and ulcers was significantly better than therapy including omeprazole, influences the quality of life of patients. Eradication of Hp for use in treatment by Ezolong reached 1.25 times more frequently than omeprazole prescribing. According to doctors' opinion Ezolong has high efficiency in 92.9% of cases, according to the patient - in 89.3% of cases. Tolerance of Ezolong in 89.3% of cases is good. Side effects are rare and are the basis for the withdrawal of the drug only in the case of allergic reactions.

Ezolong can be recommended for inclusion in the complex therapy of GERD as an effective and safe drug (taking into account the possible side effects and contraindications).