

CURRENT TRENDS IN REHABILITATION OF ASSOCIATED GASTROPATHY WITH NSAIDS

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Abstract. *The clinical studies presented in this article demonstrated that utilizing a combination of esomeprazole and zinc, as well as incorporating esomeprazole, zinc, and magnetotherapy alongside the primary treatment for NSAID-induced gastropathy in patients with musculoskeletal disorders, resulted in favorable clinical and endoscopic outcomes. Specifically, the application of esomeprazole, zinc, and magnetotherapy combination corresponded with a significant decrease in the quantity of erosions on the gastric wall.*

Keywords: *non-steroidal anti-inflammatory drugs (NSAID), NSAID-gastropathies, proton pump inhibitors, esomeprazole, zinc, diseases of the musculoskeletal system, magnetotherapy.*

Nonsteroidal anti-inflammatory drugs (NSAIDs) continue to be used as the mainstay of pain and symptom management. Every day, more than 30 million people take NSAIDs without medical advice [1]. Long-term use of NSAIDs requires monitoring for changes in the digestive system, ranging from mild discomfort to gastric or duodenal ulcers. In a proportion of patients (30 to 40%), taking NSAIDs eventually leads to gastrointestinal (GI) problems [2]. NSAIDs are widely used for musculoskeletal disorders such as arthritis and osteochondrosis accompanying pain. People with chronic musculoskeletal diseases are widely taking NSAIDs [3]. In almost all patients (approximately 100% of cases), the use of NSAIDs contributes to acute gastritis already during the first weeks of administration. The mechanisms of this side effect are complex and include both systemic (related and unrelated to the effect on prostaglandins) and local (topical) effects. To prevent and treat gastropathies caused by taking NSAIDs, drugs affecting various links of pathogenesis are taken [4]. Proton pump inhibitors (PPIs), histamine H₂-receptor blockers, antacids and GI mucosal protectants are used to neutralise the effects of NSAIDs. Esomeprazole, one of the PPIs, has the best efficacy due to its exceptional bioavailability. This is especially relevant in the context of the requirements of modern medicine. In addition, the trace element zinc plays a major role in maintaining healthy body functions, including immune system management. Zinc deficiency increases susceptibility to oxidative stress and increases the risk of gastric mucosal damage caused by the effects of inflammatory processes [5].

Purpose of the study: to investigate the specificity of clinical and endoscopic manifestations of NSAID-gastropathy in patients with diseases of the musculoskeletal system when using magnetotherapy.

Materials and methods of the study. In this study, 66 patients with musculoskeletal system diseases with a history of taking NSAIDs were investigated. The examined patients were divided into 2 groups. Patients from group A, in addition to the main treatment, received esomeprazole at a dose of 40 mg once a day in the morning 30 minutes before meals orally, as well as zinc preparation (ImmunoZinc) at a dose of 50 mg per day for 10 days of treatment. Patients in group B, in addition to the main treatment, received esomeprazole, zinc preparation and magnetotherapy

on the epigastric region for 10 minutes at a frequency of 35 Hz daily for 10 days, using a high-intensity magnetotherapy device BTL 6000, released in the UK in 2020. In 46 examined patients of group A with musculoskeletal system diseases with a history of NSAID intake, the duration of NSAID intake averaged 4.83 ± 0.78 months.

In patients from group A, the percentage of diseases was as follows: osteochondrosis of the cervicothoracic spine - 60.9% (n=28), osteochondrosis of the lumbar spine - 47.8% (n=22), osteoarthritis (osteoarthrosis) of the knee joints of stage I-II - 73.9% (n=34). Among all examined patients of group A, men were 65,2% (n=30), women - 34,8% (n=16), average age was $53,5 \pm 5,6$ years, with clinical manifestations of NSAID-gastropathy confirmed endoscopically. Group B - 20 patients with diseases of musculoskeletal apparatus with a history of NSAID intake were examined, the duration of NSAID intake varied on average 4.85 ± 0.81 months, statistically indistinguishable between Group A.

In patients from group B, the incidence of diseases was as follows: osteochondrosis of the cervicothoracic spine - 60% (n=12), osteochondrosis of the lumbar spine - 35% (n=7), osteoarthritis (osteoarthrosis) of the knee joints of stage I-II - 70% (n=14). In this group, the proportion of men was 60% (n=12), women - 40% (n=8), the average age was 58.6 ± 4.9 years.

Study results. At the end of the study in group A patients, the clinical pattern was as follows: moderately severe pain in the epigastric region was seen in 39% (n=18) of patients. Decreased appetite was observed in 13% (n=6) of patients with moderate character. The incidence of heartburn was 78% (n=36) of patients (17% (n=8) severe, 61% (n=28) moderately severe). A clinical symptom such as nausea occurred in 69% (n=32) of patients (30% (n=14) - severe, 39% (n=18) - moderately severe) (see Table 1).

Table 1.

Clinical picture in group A patients during the first days of therapy, esomeprazole and zinc combination (n=46)

Symptoms in the first days of treatment	Total	Expressed (++)	Moderately pronounced (+)	Absent (0)
Epigastric pain	39% (n=18)	-	39% (n=18)	-
Decreased appetite	13% (n=6)	-	13% (n=6)	-
Heartburn	78% (n=36)	17% (n=8)	61% (n=28)	-
Nausea	69% (n=32)	30% (n=14)	39% (n=18)	-

In group A patients, when using the combination of esomeprazole and zinc, positive dynamics of clinical changes were observed. For example, disappearance of pain in the epigastric region on average occurred on 4.28 ± 0.46 days, decrease in appetite - on 4.67 ± 0.52 days, heartburn - on 2.94 ± 0.47 days, and nausea - on 4.25 ± 0.57 days.

The clinical picture in the examined patients of group B was as follows: the incidence of moderately severe pain in the epigastric region was 45% (n=9) of patients. Decreased appetite was noticed in 10% (n=2) of patients with moderate character. The occurrence of heartburn was noted in 75% (n=15) of patients (20% (n=4) severe, 55% (n=11) moderately severe). As for nausea, it was observed in 60% (n=12) of patients (35% (n=7) - severe, 25% (n=5) - moderately severe) (see Table 2).

Table 2.

Clinical picture in group B patients during the first days of therapy, combination of esomeprazole, zinc and magnetotherapy (n=20)

Symptoms in the first days of treatment	Total	Expressed (++)	Moderately pronounced (+)	Absent (0)
Epigastric pain	45% (n=9)	-	45% (n=9)	-
Decreased appetite	10% (n=2)	-	10% (n=2)	-
Heartburn	75% (n=15)	20% (n=4)	55% (n=11)	-
Nausea	60% (n=12)	35% (n=7)	25% (n=5)	-

When using a combination of esomeprazole, zinc and magnetotherapy, positive dynamics of clinical changes was observed. Thus, disappearance of pain in epigastric region on average was observed on $3,89 \pm 0,33$ days ($p < 0,05$), appetite reduction on $4,50 \pm 0,71$ days, heartburn on $2,93 \pm 0,46$ days, nausea on $4,25 \pm 0,45$ days. When comparing between groups, positive results were achieved regarding the clinic by 9.11%.

In the course of the study, the endoscopic picture of the gastrointestinal tract in patients from group A was as follows. The frequency of erosions in the gastroduodenal region was observed in 78.2% (n=36) of patients, of which single erosions in the body of the stomach - 39.1%, the frequency of multiple erosions was 4.3%. The proportion of single erosions in the antral region (AR) was 17.4%, while the incidence of multiple erosions was 4.3%. The incidence of duodenal erosions was 13% (n=6). On the other hand, the incidence of GI ulcers was 17.4% (n=8), of which the incidence of single ulcers in the body of the stomach and AO was 8.7% each.

When using the combination of esomeprazole and zinc, positive dynamics of endoscopic changes in the gastroduodenal zone was observed. Thus, erosions in the stomach after treatment were observed in 30.4% (n=14) of patients, in the duodenum in 4.3% (n=2). In turn, ulcers localised in the stomach were observed in 8,7% (n=4) of patients, thus displaying positive endoscopic picture in the dynamics of therapy (see Table 3).

Table 3

Endoscopic picture in group A patients in the dynamics of therapy, combination of esomeprazole and zinc (n=46)

Indicators	Before treatment (n=46)	After treatment (n=46)
Erosions in the body of the stomach - single	39,1% (n=18)	21,7% (n=10) *
Erosions in the body of the stomach - multiple	4,3 % (n=2)	2,2% (n=1)
Erosions in the antral region of the stomach - single	17,4% (n=8)	4,3% (n=2)
Erosions in the antral region of the stomach - multiple	4,3% (n=2)	2,2% (n=1)
Erosions in the duodenum - single	13% (n=6)	4,3% (n=2)
Ulcers in the body of the stomach - single	8,7% (n=4)	4,3% (n=2)

Ulcers in the antral region of the stomach - single	8,7% (n=4)	4,3% (n=2)
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Note. Differences with respect to the data before treatment are significant (*-p<0.05).

The endoscopic image of the GI tract in patients from group B was as follows. The incidence of erosions in the stomach was 65% (n=13), in the dynamics of therapy - in 20% (n=4) of patients; the incidence of erosions in the 12-rectum was 10% (n=2), in the dynamics of therapy - in 5% (n=1) of patients. At the same time, the incidence of ulcers in the GI tract was 5% (n=1) and did not change in the dynamics (see Table 4).

When comparing between groups, the use of additional magnetotherapy has a positive effect on the dynamics of erosion by 11.2%, indicating a reduction in inflammation in the GI tract.

Table 4

Endoscopic picture in group B patients in the dynamics of therapy, combination of esomeprazole, zinc and magnetotherapy (n=20)

Indicators	Before treatment (n=20)	After treatment (n=20)
Erosions in the body of the stomach - single	45% (n=9)	15% (n=3) *
Erosions in the body of the stomach - multiple	-	-
Erosions in the antral region of the stomach - single	15% (n=3)	-
Erosions in the antral region of the stomach - multiple	5% (n=1)	5% (n=1)
Erosions in the duodenum - single	10% (n=2)	5% (n=1)
Ulcers in the body of the stomach - single	-	-
Ulcers in the antral region of the stomach - single	5% (n=1)	5% (n=1)

Note. Differences with respect to the data before treatment are significant (*-p<0.05).

Conclusion: Thus, the results of the conducted studies with the use of esomeprazole and zinc in addition to the main treatment of NSAID-induced gastropathy in patients with diseases of the musculoskeletal system showed favourable changes. Additional prescription of magnetotherapy in combination with this therapy had a positive effect on the clinical and endoscopic picture of the disease, contributing to the reduction of inflammatory processes in the gastroduodenal zone.

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