Research Article

Japanese Journal of Gastroenterology (2832-4870)

Epidemiology of IBS in Belarus

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Received Date : June 17, 2024
Accepted Date : June 18, 2024
Published Date : July 17, 2024

ABSTRACT

"The doctor of the future will no longer treat the human frame with drugs, but rather will cure and prevent disease with nutrition." - Thomas Edison

BACKGROUND

The triple treatment including PPI-clarithromycin and amoxicillin or metronidazole proposed at the first Maastricht conference to treat H.pylori infection has become universal since it was recommended by all the consensus conferences held around the world. However, the most recent data show that this combination has lost some efficacy and often allows the cure of only a maximum of 70% of the patients, which is less than the 80% rate aimed for at the beginning and far below what should be expected for an infectious disease. While no new drug has been developed for this indication, a number of studies have been carried out in recent years using different combinations of known antibiotics.

USE OF PROBIOTICS IN THE TREATMENT OF H. PYLORI INFECTION

Current interest in probiotics is stimulated by the increasing resistance of H.pylori to antibiotics.
Side effects arising from the use of antibiotics reduce patient compliance. This causes the search for alternative eradication of H.pylori.
In such cases, one of the drugs of choice may be the probiotics.
It was shown in our previous studies that inhibition of H.pylori growth in vitro by probiotics was in 50% -78.6% of cases with usage of Enterococcus faecium, Bifidobacterium longum and Bacillus subtilis.
Treatment with probiotics in monotherapy had an efficacy in 39%-60% of patients.

Adding to standard eradication therapy: improves the rate of successful eradication reduces side effects Increases patient compliance	Adding to standard eradication therapy: improves the rate of successful eradication reduces side effects Increases patient compliance

Canducci F., 2002; Симаненков В.И., 2004; Candelli M., et al., 2005.

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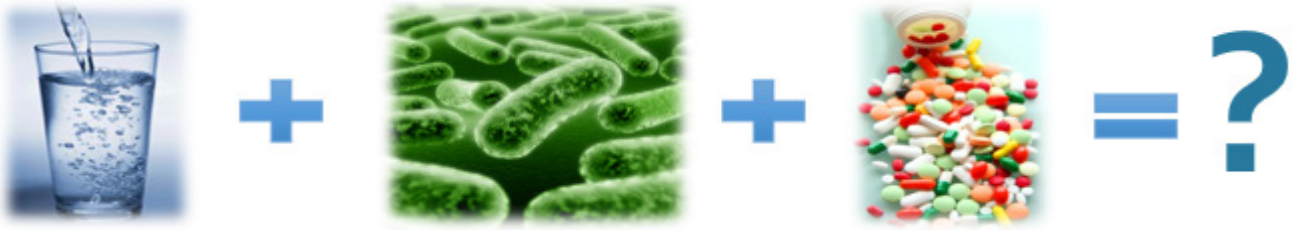
USE OF MINERAL WATER IN THE TREATMENT OF H. PYLORI INFECTION

It is also found out that mineral water have an inhibitory effect on H.pylori in vitro (Mufer Konsolar, 2007).
Hawrylik et al. proved an inhibitory effect of bisulfide and sulfide water on H.pylori in vitro model (1994).
Mineral water is widely used in the treatment of duodenal ulcer in monotherapy (Vygodner E.B., 1987, Rustamov M.N., 1986, 1999, 2004) as well, as adjuvant therapy to standard triple eradication regimen based on clarithromycin (Osipov Y.S. et al., 2008).
Low mineralized sulfide water achieved H.pylori eradication (Ignatko L.V., Shwardka V.V., 2001)
The combined use of probiotics and mineral water was not performed in patients with H.pylori -positive duodenal ulcer.
We decided to continue to study effects of nonpharmacologic factors on H.pylori eradication.

AIM

To investigate the effect of probiotics, mineral water and PPIs in patients with Helicobacter pylori - positive duodenal ulcer.



MATERIALS AND METHODS

150 H.pylori-positive duodenal ulcer patients were randomized into 3 groups.
H.pylori was confirmed histologically and by Breath HELIK-Test.
pH-metry, blood analyses and microbiological study of feces also were performed.
Eradication included:
Group I: 10-days twice daily PPIs, amoxicillin, clarithromycin, then 20-days PPIs plus once daily probiotics, containing Lactobacillus bulgaricus DDS-14, Lactobacillus rhamnosus, Lactobacillus acidophilus DDS-1 and Bifidobacterium bifidum;
Group II: PPIs and probiotics once daily and alkaline hydrocarbonate-chloride sodium mineral water Essentuki-4 200 ml trice daily during one month;
Group III: probiotics and PPIs.
Treatment in all groups lasted during one month.
Therapeutic success was confirmed by a negative histological examination and Breath HELIK-Test, performed in 4-12 weeks after therapy.

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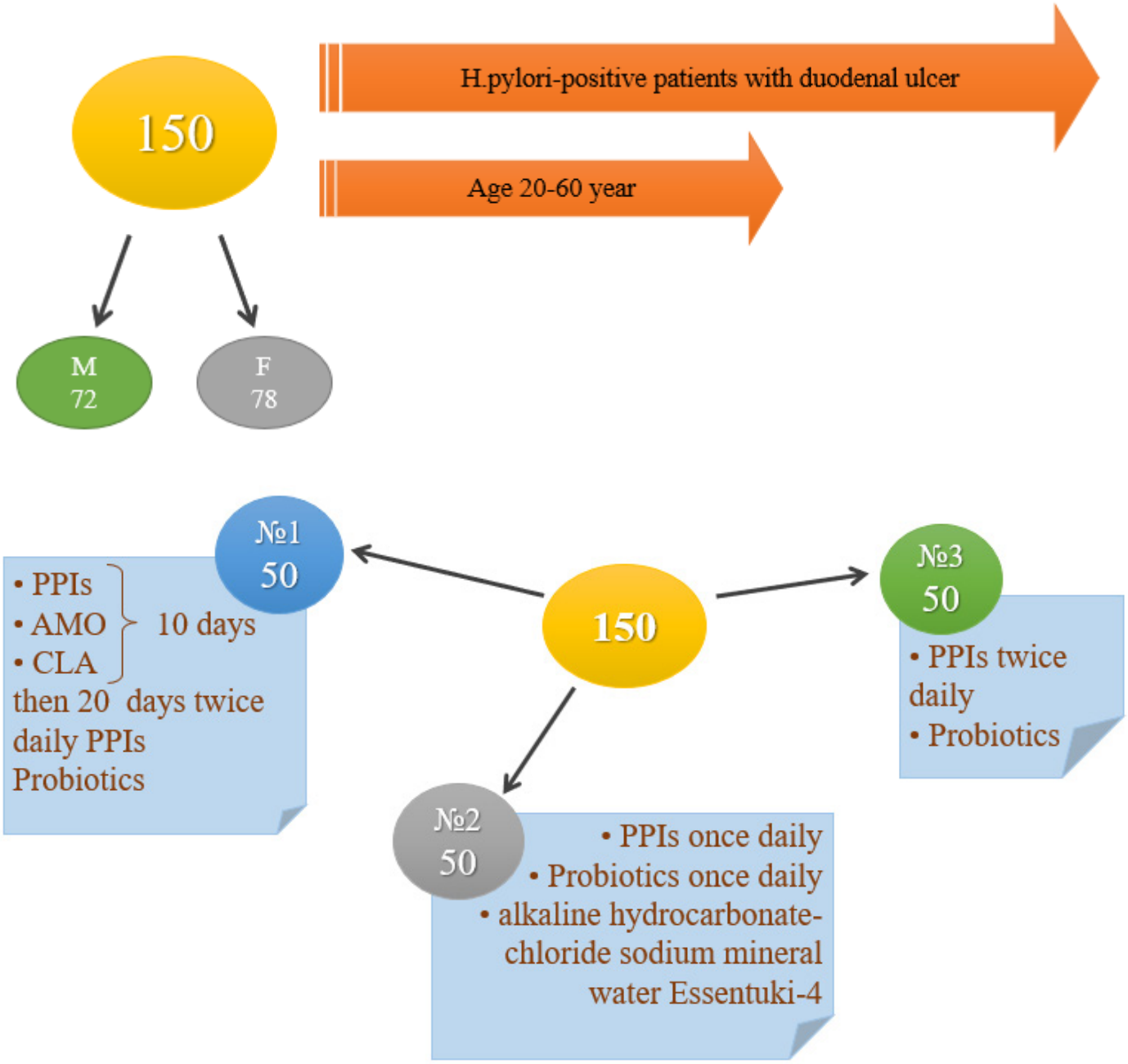

RESULTS

In Group I dyspeptic complaints (DC) disappeared in 74%, and decreased in 20%.
Disappearance of DC was 78%, and 74% in II and III groups respectively.
After treatment in II group significantly decreased alanine transaminase, asparagines transaminase, alkaline phosphatase, cholesterol;
in III group significantly decreased alkaline phosphatase and cholesterol.

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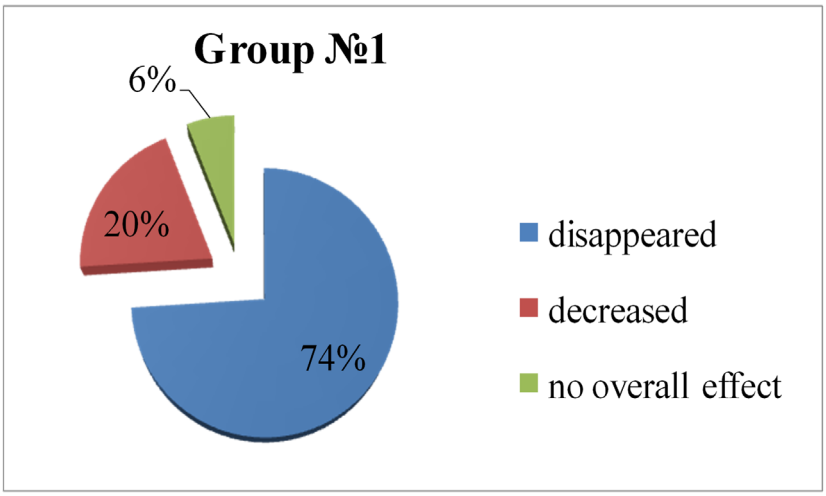
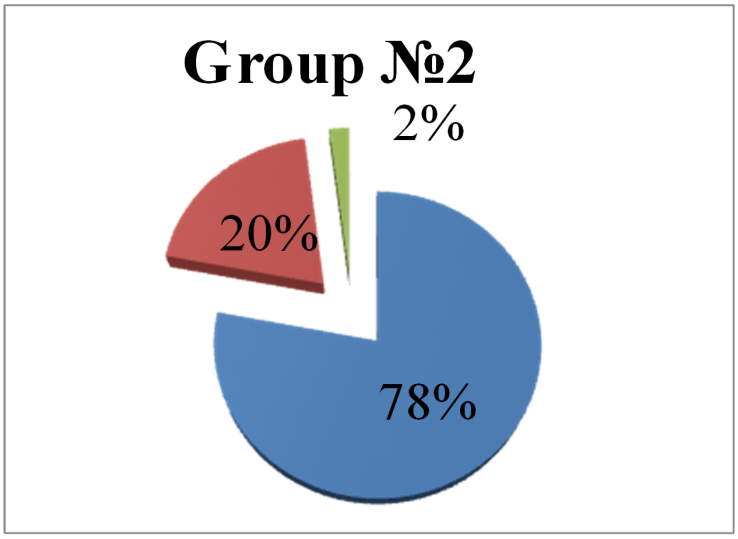
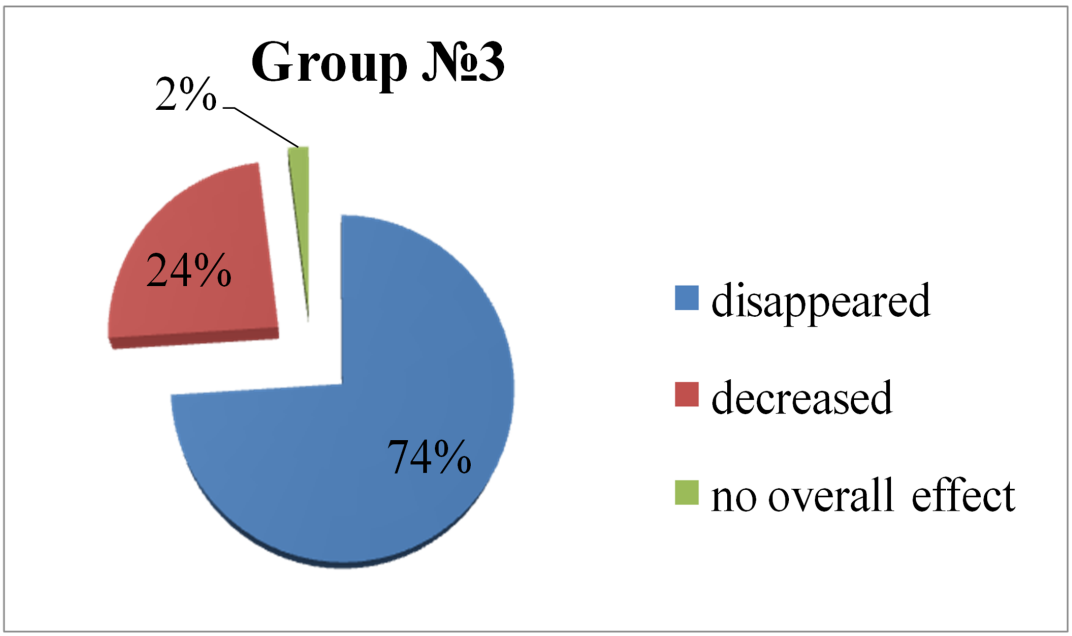
Dyspeptic complaints







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The results of microbiological studies of feces

In all groups the level of pathogen microflora decreased and the level of normal microflora increased, but it was significant only in II group

Table 1 : The results of microbiological studies of feces

Microorganisms	Before treatment (Colony forming unit)	After treatment Colony forming unit)
E.Coli (with normal enzymatic activity)	5,12±1,21	6,12±1,15
E.coli (with decreased enzymatic activity)	4,44±1,09	3,98±0,87
E.coli (haemolitic)	5,04±1,19	3,82±0,8
Proteus	5,34±1,02	4,58±1,05
Klebsiella	6,2±1,21	5,36±0,83
Citrobacter	6,0±0,93	5,48±0,79
Enterobacter	6,32±1,08	5,58±0,84
St.aureus	4,06±0,98	3,56±0,64
Clostridium	6,02±0,98	5,74±0,72
Enterococcus	6,38±1,14	6,1±0,74
Candida	4,76±0,85	4,62±0,7
Bifidobacterium	6,14±0,97	6,66±0,69
Lactobacillus	5,08±0,78	5,74±0,53

Table 2

Microorganisms	Before treatment (Colony forming unit)	After treatment Colony forming unit)
E.Coli (with normal enzymatic activity)	5,02±1,15	7,04±0,78
E.coli (with decreased enzymatic activity)	4,92±1,24	3,38±0,53
E.coli (haemolitic)	5,04±1,37	3,38±0,64
Proteus	5,48±1,15	3,96±0,75
Klebsiella	6,4±1,4	4,94±0,68
Citrobacter	6,42±1,09	5,16±0,62
Enterobacter	6,28±1,13	4,9±0,61
St.aureus	4,3±1,07	3,32±0,47
Clostridium	6,04±1,03	5,24±0,48
Enterococcus	6,32±1,15	5,64±0,72
Candida	4,8±0,88	4,2±0,49
Bifidobacterium	6,22±1,07	7,4±0,78
Lactobacillus	5,02±0,82	6,06±0,55

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Table 3

Microorganisms	Before treatment (Colony forming unit)	After treatment Colony forming unit)
E.Coli (with normal enzymatic activity)	5,02±1,2	6,62±0,75
E.coli (with decreased enzymatic activity)	4,26±1,27	3,42±0,64
E.coli (haemolitic)	5,0±1,6	3,52±0,58
Proteus	5,44±1,19	4,5±0,84
Klebsiella	6,3±1,33	5,14±0,88
Citrobacter	6,24±1,29	5,28±0,73
Enterobacter	6,2±1,23	5,28±0,7
St.aureus	4,18±1,06	3,42±0,54
Clostridium	5,82±0,85	5,42±0,57
Enterococcus	6,14±1,09	5,86±0,67
Candida	4,54±0,76	4,04±0,57
Bifidobacterium	5,2±1,08	5,84±0,68
Lactobacillus	5,82±0,73	5,42±0,55

Eradication rates were 82%, 80% and 68% in I, II, and III groups, respectively.
Healing of duodenal ulcer was in 84%, 86%, and 78% of cases, in I, II and III groups respectively.
Intragastric and intraduodenal pH was significantly increased in all groups, especially in II.

Figure 1: Endoscopic control of duodenal ulcer healing

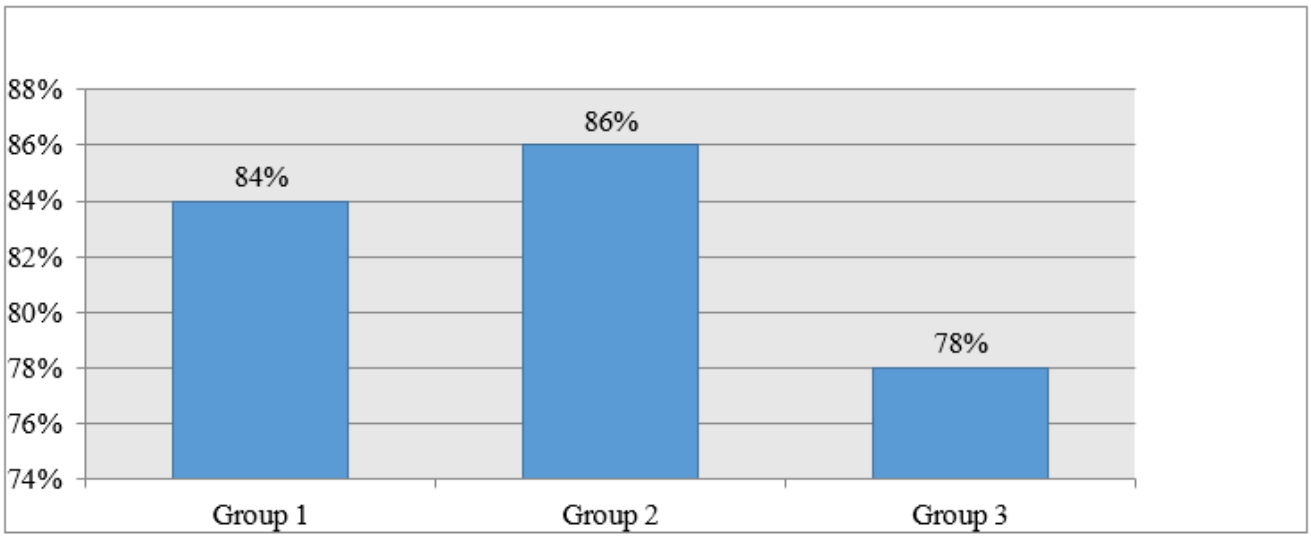

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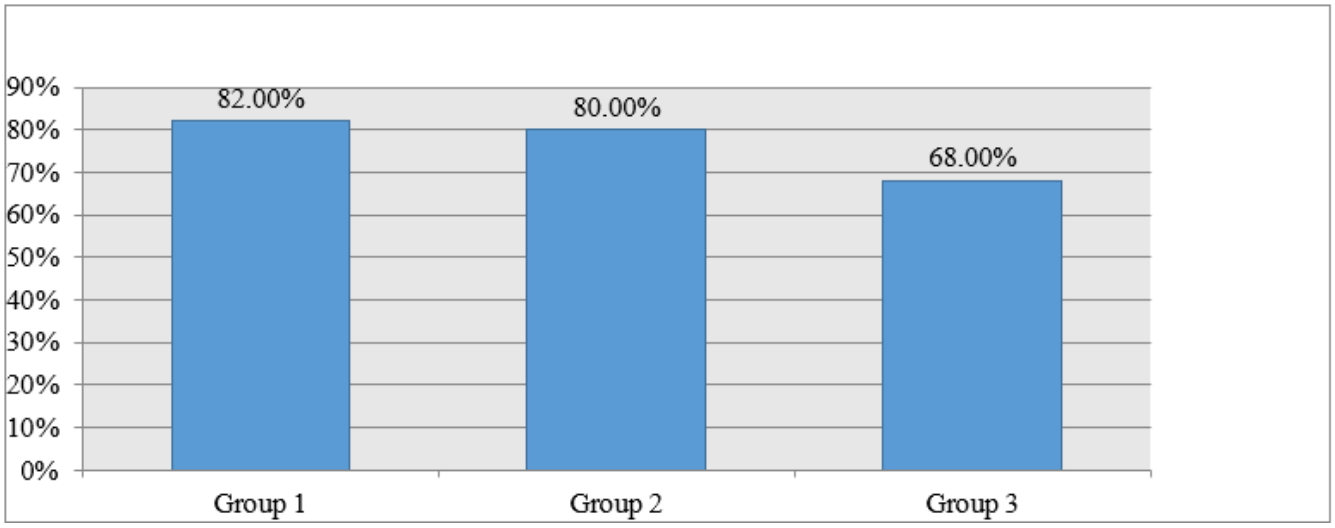
Figure 2 : Eradication rates of Helicobacter pylori



CONCLUSION

Adding probiotics to standard triple therapy improves an efficacy of H.pylori eradication.

The combined use of PPI, probiotics and alkaline hydrocarbonate-chloride sodium mineral water is a highly-effective and low-cost alternative therapy in patients with H.pylori -associated duodenal ulcer.

This regimen may especially be helpful in patients with a history of gastrointestinal adverse effects with antibiotics, comorbid patients with diseases of the hepatobiliary system and the metabolic syndrome.

This is a promising therapy, but further trials are needed before it can be recommended widely.