

APPLICATION OF THE MEDICATION ENTEROSGEL IN TREATMENT OF PATIENTS WITH ACUTE ENTERIC INFECTIONS

V. M. Semenov, T. I. Dmitrachenko, E. P. Provolotskii, N. V. Lyakhovksaya

Vitebsk State Medical Institute, Vitebsk, Belarus, 1998

The toxins of pathogenic intestinal bacteria have the main and, sometimes, single pathogenetic action in the course of acute enteric infection. Due to this, one the leading places in the therapy of these infections is assigned to application of medications capable to sorb bacterial toxins whereby the subsequent progress of disease is prevented.

Enterosgel is one of such medications, which has a selectivity toward elimination of toxic average-molecular weight substances from the body. The medication does not disturb the tunica mucosa of mouth and esophageal and intestinal mucosa upon its administration and does not upset parietal digestion. Besides sorption of toxins, **Enterosgel** has the properties of adhesion and breakage of microbial cells of enterobacteria. Interaction of microorganisms with organosilicone sorbents can be regarded as a two-step process involving adhesion of the liposaccharide and protein components of cell walls of Gram-negative bacteria and its subsequent destruction. In literature, there are data on the beneficial effect of **Enterosgel** administration in treatment of the patients suffered from enteric infections against the background of baseline therapy, but the doses and the course of treatment are not optimized. In addition, taking into account that **Enterosgel** is capable of both sorption of toxins of Gram-negative bacteria and adhesion of microbial cells, the possibility of its application not only as the pathogenetic agent, but also as the etiotropic agent have not been determined completely.

RESEARCH OBJECTIVE

The aim of the present research is to estimate **Enterosgel** in treatment of the patients suffered from acute dysentery as the pathogenetic and etiotropic agent under pressure of the baseline therapy and without it.

PATIENT GROUPS, THERAUPETIC REGIMENS, AND RESEARCH METHODS

The study included the persons without comorbidity.

The following patients were under care of a physician:

18 patients suffered from dysentery caused by *Shigella Flexneri*;

20 patients suffered from salmonellosis caused by *Salmonella enteridis*;

7 patients suffered from salmonellosis caused by *Salmonella typhimurium*;

18 patients suffered from dysentery caused by *Shigella Flexneri* at the age from 6 months to 60 years old, which received Enterosgel, were divided in 2 groups.

1st group (5 patients). **Enterosgel** was assigned during the baseline therapy (furasolidone, decoction of oak-bark, detoxication parenteral therapy). Administration of the medication was performed mainly in Days 3-5 from the time of patient admission to hospital against the background of the absence of therapeutic effect.

2nd group (13 patients). **Enterosgel** was assigned in Days 1-2 from the onset of disease. In this group, etiotropic therapy was not performed at first.

In estimating the efficacy of Enterosgel administration in treatment of the patients suffered from acute dysentery caused by *Shigella Flexneri*, the test and control groups included only patients with moderate and severe colitis (or gastroenterocolitis) forms of disease (Table 1).

Table 1. The efficacy of Enterosgel administration in the patients suffered from dysentery

Patient group	Number of the patients examined	Duration of diarrhea	Duration of fever
Received the medication in Day 1 of disease without using antimicrobial agents	8	3-4 days	1 day
Received the medication in Day 2 of disease without using antimicrobial agents	5	More than 4 days	3-4 days

20 patients suffered from salmonellosis caused by *Salmonella enteridis* with the average-severe and severe gastrointestinal forms of disease, which received **Enterosgel**, were divided in 2 groups (Table 2).

Table 2.

The efficacy of Enterosgel administration in the patients suffered from salmonellosis

Patient group	Number of the patients examined	Duration of diarrhea	Duration of fever
Received the medication in Days 1-2 of disease	7	3-4 days	1 day
Received the medication in Days 3-4 of disease	13	4-6 days	2-4 days
Control group	12	4-6 days	2-4 days

Administration of Enterosgel was performed during the detoxication and rehydration therapy.

The control group included 40 patients suffered from salmonellosis and dysentery and received the baseline therapy (furasolidone, decoction of oak-bark, and saline solutions).

The diagnosis of disease was confirmed by the bacteriologic research methods.

Enterosgel was administered to children of seven and downward per 1 teaspoon (5 g) three times a day and to children of seven years and upwards per 1 tablespoon (15 g) three times a day. The patients received the medication 1.5-2 hours before meat or 2 hours after meat and medication taking.

RESEARCH RESULTS

- 18 patients suffered from dysentery caused by *Shigella Flexneri*

Sufficiently fast improvement of the course of disease was observed in the patients of the first group received Enterosgel. Already at the end of first day or beginning of the second day from the time of drug administration, there was a considerable decrease in the intoxication symptoms, which favored a decrease in the volume of the detoxication therapy to be administered or its cessation. However, the duration of colitis syndrome did not differ from the control group.

The patients of the second group received Enterosgel (in this group, the etiotropic therapy was not administered at first and Enterosgel was administered in Days 1-2 from the onset of disease).

If the patients received the medication no later than 12-24 after the onset of disease, the fast improvement was observed. The intoxication symptoms disappeared at the end of the first day of therapy and stool was normalized in Days 3-4. If the medication was administered later than 24 hours, in most cases (3 of 5), the intoxication symptoms, fever, and pathologic stool remained in the second day of the therapy administered. In this regard, it was necessary to invoke an additional administration of etiotropic drugs. In treatment of the patients suffered from dysentery, administration of **Enterosgel** lasted no more than 3-5 days.

- 20 patients suffered from salmonellosis caused by *Salmonella enteridis*

In treatment of 20 patients suffered from salmonellosis caused by *Salmonella enteridis* with the average-severe and severe gastrointestinal forms of disease, administration of the medication in Days 3-4 from the onset of disease has almost no effect on the clinical course of disease, although some arresting of the intoxication symptoms without significant change in the character of diarrheal syndrome was still noted, which was imperceptible compared to the control group. At the same time, when the drug was administered in the first day of disease, the fast (for 24 hours) reduction of the intoxication symptoms occurred. Therefore, the patients were not needed in the parenteral detoxication therapy and stool was normalized rapidly, no later than 3-4 days after drug administration. The patients were not needed in administration of Enterosgel for more than 3-4 days.

- 7 patients suffered from salmonellosis caused by *Salmonella typhimurium*

Of special interest is the application of **Enterosgel** in treatment of the patients with the hospital-acquired salmonellosis caused by *Salmonella typhimurium*. The studies performed by us earlier allowed determining the positive effect of netilmicin sulfate in treatment of the children suffered from the hospital-acquired salmonellosis. In this regard, we conducted an assessment of **Enterosgel** administration in 10 children at the age from 6 months to 1.5 year, suffered from the hospital-acquired salmonellosis, during the therapy with netilmicin sulfate and detoxication therapy. At the same time, administration of **Enterosgel** influenced slightly the course of disease. As compared with the control group, there were no significant differences in the

duration and intensity of the intoxication syndrome, although the duration of diarrhea reduced in most cases by 1-2 days. However, upon the long-term use of **Enterosgel** for 1-2 weeks, palindromias, which have been observed by us earlier in certain cases, were noted in no case and the terms of bacterioexcretion reduced.

In addition, we assigned **Enterosgel** to 5 children at the age from 6 months to 3 years, which had the unstable porridge-like stool for 3-5 weeks after earlier enteric infection (dysentery, salmonellosis, staphylococcal enterocolitis) and received the long-term inadequate antimicrobial therapy. At that, stool normalization was observed in Days 2-3 after the time of drug administration. However, in this case, it was necessary to administer the drug for a long period, namely, not less than 2-3 weeks.

CONCLUSIONS

Thus, taking into account the results obtained, one can recommend the application of Enterosgel in treatment of the patients suffered from dysentery and salmonellosis. At the same time, one should appreciate that it is wise to administer the drug as early as possible after the onset of disease. Drug administration in the first day of disease allows one to avoid the etiotropic therapy upon mild and average-severe forms of dysentery. Drug administration in earlier terms allows one to reduce the duration of detoxication and rehydration therapy in the case of salmonellosis and to reduce the terms of bacterioexcretion in the case of hospital-acquired salmonellosis.

References:

1. Znamenskii V. A., Vozianov A. F., Vozianova Zh. V. et al. Application of medicoprophyllactic drugs prepared based on organosilicone sorbents. Procedural guidelines. Kiev, 1996, 14 pp. (in Russian)
2. Kaban A. P., Samodumova I. M., Znamenskii V. A. et al. // Vrachebnoe delo, – 1984. – pp. 81-84 (in Russian)
3. Shostka G. D., Ryabov S. I., Lukichev B. G. et al. // Terapevt. arkh. – 1984. No. 7. – pp. 58-63 (in Russian)