The Influence of Ozonized Solutions on the Oxyntic Function of a Stomach of Patients with Peptic Ulcer of a Bulb of a Duodenal Intestine.

Serova A.N., Boyarinov G.A., Muratov S.V., Panteleyev V.L.

Medical Center HELP, Zvezdinka 7 – 181, Nizhny Novgorod, Russia

Abstract

The examination of 46 patients with peptic ulcer of a bulb of a duodenal intestine (PUBDI) and 30 healthy people has been conducted. The ozonized physiological solution was injected to the patients with PUBDI intravenously. The ozonized distilled water was taken by the patients perorally. The healthy people took only ozonized distilled water. The research of the secretory function of a stomach was conducted by the method of inside - gastric pH-measuring.

It is ascertained that the intravenous injection of ozonized physiological solution and the peroral dose of ozonized distilled water do not influence the oxyntic function of a stomach.

Introduction

In the last few years in a number of countries, including Russia, the concern to usage of ozone at treatment of a lot of diseases has been increasing. It is known that the ozone renders antibacterial, funginous, anti-virus, immunomodulating effect, stimulates antioxydent protection, improves microcirculation and reparation of tissues.

Many works about the successful usage of ozonized solutions at treatment of patients with PUBDI have appeared nowadays. In particular there are positive results of antihelicobacter effect of ozonized solutions both at monotherapy and in a complex with the drugs of colloidal bismuth and blockers of a proton pump. Ozonized solutions promoted the decrease of an amount of relapses of disease, positive dynamics of clinical signs was scored (1, 2, 3, 5, 6, 7, 8).

But we have not found any data on study of influence of ozonized solutions on the oxyntic function of a stomach in the literature. In this connection the study of influence of different methods of ozonotherapy on the secretory function of a stomach seems to be expedient to us. The purpose of our work was to study the influence of ozonized physiological solution and ozonized distilled water on the oxyntic function of a stomach of the patients with PUBDI and healthy people.

Materials and Methods

46 patients (35 men and 11 women) in a stage of exacerbation of PUBDI and 30 healthy people (18 men and 12 women) in the age of 19-65 years were included in the study by us. The study of the oxyntic function of a stomach was realized with the help of the system for a long-lived continuous pH-monitoring "Gastroscan-24", made by the state research-and-production enterprise "Istok-system", Friazino, Russia.

The study started at 8.00 a.m. The patients were on an empty stomach. A working section of three-electrode pH sonde was introduced into a stomach through a nose. Fissile antimony electrodes were placed in a distal department of an esophagus, body and antral department of a stomach. The rightness of disposition of fissile electrodes was controlled by the method of X-ray examination of a stomach, esophagus. For data processing the personal computer Pentium II was used. The conclusion of the analysed information on each study was realized in a graphic and text mode. The results of influence of ozonized solutions on the oxyntic function of a stomach were evaluated on dynamics of variation of pH-parameters before and after introduction of ozonized solutions within 4 hours.

The ozonized solutions were prepared *ex tempore*, for what the installation UOTA-60-01-"Medozon" was used, Moscow, Russia.

The ozonized physiological solution (OPS) was injected to the patients with PUBDI intravenously in the volume of 200 mls with concentration of ozone of 5 mg/l with the speed of 240 drops/minute at 9.00 a.m. in an hour after the meal. Ozonized distilled water (ODW) was taken by them perorally in the volume of 200 mls with concentration of ozone of 10 mg/l at 2.00 p.m. in an hour after the meal. The healthy people took only ozonized distilled water in the volume of 200 mls with concentration of ozone of 10 mg/l perorally at 2.00 p.m. in an hour after the meal.

Results and Discussion

Outcomes received at realization of pH-measuring in an esophagus, body, antral department of a stomach of the patients with PUBDI and healthy people before and after the introduction of ozonized solutions are presented in the tables I and II.

As it is understandable from the table I parameters of pH in an esophagus, body, antral department of a stomach of the patients with PUBDI before and after intravenous injection of OPS and taking ODW (during 4 hours) did not have essential differences.

From the table II it is also understandable that the pH-parameters in an esophagus, body, antral department of a stomach of healthy people before and after taking ODW (during 4 hours) did not have essential differences.

Table I. Dynamics of variation of pH-parameters in an esophagus, body, antral department of a stomach of the patients with PUBDI before and after the injection of the ozonized physiological solution and taking the ozonized distilled water

Periods of pH-measuring	pH-parameters of the patients with PUBDI n=46					
	Intravenous injection of 200 mls of OPS with ozone concentration 5 mg/l			Peroral taking of 250 mls of ODW with ozone concentration 10 mg/l		
	Esophagus X±mx	Body X±mx	Antral X±mx	Esophagus X±mx	Body X±mx	Antral X±mx
Before treatment	6,0± 0,24	1,6± 0,27	2,4± 0,43	6,4± 0,21	1,73± 0,28	2,2± 0,33
In 10 min.	5,8± 0,22	1,5± 0,21	2,3± 0,33	6,3± 0,19	1,78± 0,21	2,1± 0,31
In 20 min.	5,8± 0,22	1,6± 0,36	2,3± 0,39	6,3± 0,27	1,6± 0,38	2,3± 0,33
In 30 min.	6,0± 0,16	1,7± 0,27	2,4± 0,38	6,4± 0,22	1,6± 0,29	2,4± 0,38
In 40 min.	5,9± 0,22	1,7± 0,31	2,4± 0,30	6,5± 0,24	1,7± 0,34	2,5± 0,36
In 50 min.	6,0± 0,17	1,8± 0,24	2,5± 0,26	6,3± 0,25	1,88± 0,31	2,5± 0,29
In 60 min.	6,0± 0,18	1,8± 0,19	2,3± 0,28	6,2± 0,32	1,92± 0,21	2,3± 0,38
In 70 min.	5,9± 0,18	1,7± 0,26	2,2± 0,35	6,4± 0,35	1,82± 0,21	2,2± 0,31
In 120 min.	5,9± 0,15	1,85± 0,34	2,4± 0,37	6,5± 0,30	1,78± 0,34	2,1± 0,35
In 180 min.	5,8± 0,25	1,7± 0,30	2,5± 0,37	6,4± 0,25	1,66± 0,29	2,1± 0,30
In 240 min.	6,0± 0,23	1,6± 0,36	2,6± 0,47	6,5± 0,20	1,72± 0,34	2,2± 0,47

Table II. Dynamics of variation of pH-parameters in an esophagus, body, antral department of a stomach of healthy people before and after taking the ozonized distilled water

Periods of pH-measuring	pH-parameters of healthy people n=30		
	Peroral taking of 250 mls of ODW with ozone concentration 10 mg/l		
	Esophagus X±mx	Body X±mx	Antral X±mx
Before treatment	6,7± 0,21	1,84± 0,26	2,7± 0,33
In 10 min.	6,6± 0,29	1,83± 0,32	2,8± 0,31
In 20 min.	6,5± 0,37	1,9± 0,29	2,7± 0,33
In 30 min.	6,7± 0,27	1,92± 0,24	2,8± 0,38
In 40 min.	6,7± 0,28	1,86± 0,21	2,9± 0,36
In 50 min.	6,6± 0,26	1,8± 0,19	2,9± 0,29
In 60 min.	6,5± 0,31	1,75± 0,25	2,8± 0,38
In 70 min.	6,6± 0,33	1,72± 0,22	2,7± 0,31
In 120 min.	6,5± 0,32	1,72± 0,22	2,9± 0,35
In 180 min.	6,7± 0,28	1,80± 0,36	3,0± 0,30
In 240 min.	6,6± 0,29	1,83± 0,32	2,9± 0,47

The received data allow to assert that intravenous injection of ozonized physiological solution with concentration of ozone of 5 mg/l do not influence the level of introgastral acidity in a stomach and do not change the pH level in an esophagus. Thus, the basic effect of ozonotherapy at treatment of patients with PUBDI by ozonized solutions will be directed on suppression of *Helicobacter pylori*, improving microcirculation and reparation of tissues.

Conclusion

The ozonized physiological solution intravenously injected and the ozonized distilled water perorally taken do not influence the level of the oxyntic function of a stomach and pH-parameters in an esophagus, body and antral department of a stomach.

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