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Some Aspects of Nutritional Nutrition for Early Prevention of Gastrointestinal Bleeding in Burned

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Annotation--- *In carrying out this work, we based the results of the study on the results of assessments of lesions of the stomach and duodenum in burned patients, according to the endoscopic research method. 91 patients who received probe nutrition with a lesion area of 25 to 45% of the body surface were examined. Extremely important is the early transfer of severe patients to enteral nutrition, which significantly reduces the incidence of ulcers and bleeding. Combined therapy in seriously burned patients with the inclusion of probe hyperalimentation can reduce the severity of exhaustion, effectively correct metabolic disorders of the gastrointestinal tract, provide an adequate amount of plastic material, thereby reducing the number of complications of a burn disease and improve the results of surgical treatment.*

Keywords--- *Burns, Medical Nutrition, Prevention of Exhaustion.*

I. INTRODUCTION

One of the formidable complications after a burn injury is erosive-ulcerative changes in the gastrointestinal tract (GIT). According to the literature, only 1.6–2.6% of cases are detected, and acute erosion and eruptions occur in 30.3–66.1% of cases [1,2,3,15, 12]. Burn shock, intoxication, hyperthermia cause her serious neuropsychic changes, disorders of the digestive tract. This is manifested by hypo- and anorexia, nausea, vomiting, flatulence, decreased digestion and absorption capacity of the stomach and intestines. Since the enteral pathway of nutrients in the early post-traumatic (post-burn) period is blocked, the age-related energy and plastic needs of the body are provided mainly by parenteral nutrition (PP). On average, the energy requirement in the gastrointestinal tract is more than 30%, while the metabolic status is 3500-4500 kcal/day [3,10,11].

Extremely important is the early transfer of the number of patients to enteral nutrition, which is due to the frequency of ulcers and bleeding [7,9,10,16].

II. MATERIALS AND METHODS

The representative office works for 103 patients who were treated in the combustiology department of the Samarkand branch of the Russian Center for Scientific and Technical Research for the prevention of erosive and ulcerative lesions of the gastrointestinal tract for the period 2015-2019. Among 103 patients, there were 65 (63.1%) men and 38 (36.9%) women. Of these, from 84 to 45%, the total area of thermal damage is 36.7 ± 7.7% p.p. The Frank index ranged from 25 to 205 (88.5 ± 41.3) i.e.

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Table 1: The Distribution of Patients with Acute Erosion and Ulcers of the Stomach and Duodenum, Depending on the Degree of Severe Thermal Injury

Group of patients (Franco index units)	Number of patients				
	Total in groups	Of them, examined endoscopically.		Among those examined, acute erosion and ulcers were revealed.	
		Abs.	%	Abs.	%
I (until 30)	19	15	78,94	3	20,0
II (31-60)	25	22	88,0	10	45,45
III (61-90)	37	32	86,48	17	53,12
IV (over 90)	22	22	100,0	19	86,36
Total:	103	91	88,34%	49	53,8

Of the 103 patients, 91 (88.34%) of the victims had an endoscopic examination. Studies have shown that 8 patients have crater-like ulcers of the duodenal bulb. The sizes of ulcers were from 0.3-0.4 cm to 0.5-0.8 cm with hyperemic and edematous border, which indicates an exacerbation of the process. In 5 patients, acute, flat ulcers of the pyloric stomach were revealed, and in 13 patients, catarrhal duodenitis was simultaneously detected. 36 revealed an erosive lesion of the gastric mucosa in the antrum.

In 3 (2.9%) patients who died at autopsy were diagnosed with ulcerative lesions of the stomach and 12 duodenal ulcer (Curling-Duputren ulcer). When assessing the condition of the mucous membrane of the upper digestive tract in calves, according to endoscopic studies, we took into account the colour of the mucous membrane, the presence or absence of its swelling, diffusion or focal changes in the mucous membrane, including the presence of erosion, ulcers, size and location folds.

III. RESULTS

As you know, deep extensive burns are characterized by metabolic imbalance. The lack of plastic and energy resources leads to a significant loss of body weight, to a decrease in the immunobiological protective reactions of the body, to a slowdown in reparative processes in the burn wound, impaired gastrointestinal tract function, and deterioration of the results of surgical treatment. Most often this occurs in the third period of burn disease, complicated by burn exhaustion [7,8,13,14,] therefore, to correct these processes, along with parenteral nutrition, we used probe nutrition. The comprehensive and correct treatment for burn disease is impossible without adequate and early nutritional support, since hypermetabolic syndrome, which is manifested by an increase in the basal metabolic rate to 180-200% [8,14], and catabolism of serum albumin and globulins, plays a crucial role in the pathogenesis of thermal injury. Nutritional support begins, on average, after 12-24 hours from the moment of injury. Enteral nutrition was carried out in patients whose intestinal motor-evacuation function was restored.

Protein hydrolyzates concentrated glucose solutions, and fat emulsions were injected daily into the probe. The daily caloric value of the supplementary to the hospital diet averaged 1700-2000 k / cal. For better digestibility of the injected drugs, patients were prescribed a complex of vitamins B, C, insulin, anabolic hormones. The average duration of probe feeding was 24 days.

The number of calories needed for the burned was determined by the following formula (M. Hildrethetal., 1982): 1800 kcal / m2 body surface/day (physiological needs) + 2200 kcal / m2 burn area/day (additional calories needed to

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make up for the costs that arise as a result of a burn).

In most patients, for 2-3 days, it becomes a possible option combined (enteral + parenteral) nutrition. Gradually, up to 65-80% of the input of calorie and nitrogen is given to the share of enteral nutrition. As an agent for this artificial nutrition option, the most effective is the enteral mixture - Probe-III, compiled at the Samarkand branch of the Russian Scientific Center for Scientific and Technical Information (Table 2).

Table 2: The Composition of the Nutrient Mixture Probe III

№	Name	Quantity
1	Meat stock	2000 ml
2	Twisted boiled meat	400 g
3	Egg yolk	100 g
4	Sour cream	100 g
5	Butter	50 g
6	Carrot juice	100 ml
7	Apple juice	100 ml
8	Dried apricots	100 g
9	Semolina	40 g
10	Potatoes	200 g
11	Oatmeal	30 g
TOTAL: proteins 126g, fats 129g, carbohydrates 380 g		3200-3500 kcal

Burns less than 50% .- 40-60kcal / kg, more than 50% -60-80kcal / kg.

In patients with deep burns of 15% or more of the surface of the body, it is advisable to start tube feeding after 24-48 hours. The fundamental difference between feeding through a probe in annealed patients compared to other surgical patients is that it is used only as an extra. After 2-3 days, patients become accustomed to the probe, it does not cause them much trouble and does not interfere with normal food. Every day in between meals, the mixture is fractionally injected through the probe - Probe III with a complex of vitamins (A, B1, B2, C, PP).

After 2-3 weeks, the probe should be removed when the protein balance is normalized, the skin is restored by auto dermal transplantation. On average, about 9.0 l (9000 kcal) of the probe III nutrient mixture is consumed per course of treatment.

The volume and speed of enteral nutrition are determined individually. We used periodic (session) nutrition in 18 patients for 4-6 hours. With interruptions for 2-3 hours. From 450 to 850 ml daily, for 2-3 weeks after the burn. No complications of enteral nutrition were observed. The method of early nutritional support has paid off quite well and there are no reasonable reasons for a patient suffering from severe thermal trauma to be exposed to starvation. We consider it fundamentally important that the early onset of enteral nutrition (in a state of shock) is path genetically justified than parenteral nutrition, which is due to the following circumstances:

- nutrient substrates in the intestine are a powerful incentive for the growth and regeneration of cellular elements of the mucous membrane since the small intestine by 50% and the colon by 80% provide their nutritional needs through the entry of substrates from their lumen, which prevents dystrophy and atrophy of its mucosa shells;

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- nutrient substrates introduced into the intestine contribute to the early and effective stimulation of its motor-evacuation function;
- the need for prevention in critical situations of acute erosive and ulcerative lesions of the gastroduodenal mucosa (Curling ulcers);
- with full enteral nutrition, it reduces the severity of the stress response of the patient's body and the catabolic orientation of metabolism during thermal trauma is stopped as quickly as possible [9].

It should be noted that in the presence of adequate protein support for the patient and preserved liver functions, the latter can synthesize up to 20 g of protein per day, 50-60% of which is albumin (10-12 g / day). The result of the introduction of the method of early enteral nutrition was a reduction in the duration of multiple organ dysfunction from 8.45 ± 0.5 to 6.22 ± 0.3 days ($P < 0.05$) and the treatment time in the intensive care unit from 12.02 ± 0.6 to 9.3 ± 0.3 days ($P < 0.05$). None of the patients receiving enteral nutrition from the first day showed bleeding from the gastrointestinal tract, while in the group with late-onset there were 6 (16.6%). In the group of early enteral nutrition, a decrease in the consumption of blood preparations by 22% and plasma substitution media - by 36%. In the prevention of complications and shortening the treatment time for patients with severe thermal injury, not only the fact of the presence of adequate enteral nutrition is important, but also the timing of its onset. The patient's well-being, condition of a burn wound, indicators of electrolyte and protein metabolism, and the degree of engraftment of auto-grafts served as a criterion for the effectiveness of probe nutrition. There were no negative reactions to the administration of drugs through the probe and there were no unpleasant sensations associated with this.

In conclusion, it should be noted that the treatment of burned is not limited to the use of infusion-transfusion therapy and adequate mixed (parenteral + enteral) or enteral nutrition. Along with this, necrotomy, early neurectomy, skin grafting using autodermotransplantation, antibiotics, anaesthesia, cardiovascular agents, etc. are used. We tried to show the ways, methods and possibilities of adequate trans-enteral nutrition in patients with burns.

IV. CONCLUSION

In the treatment of burn disease, preference should be given to enteral nutrition, since enteral nutrition is more physiological, 8-10 times cheaper than parenteral nutrition, does not require strict sterile conditions and practically does not cause life-threatening complications.

Thus, complex therapy in seriously ill people with the inclusion of probe hyperalimentation can reduce the severity of exhaustion, effectively correct metabolic disorders of the gastrointestinal tract, provide a sufficient amount of plastic material, thereby reducing the number of complications of burn disease and improve the results of surgical treatment and the quality of life of patients.

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