

# БИОМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

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# БИМЕДИЦИНА ВА АМАЛИЁТ ЖУРНАЛИ

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**ENDOSCOPIC CHARACTERISTICS OF GASTRODUODENAL COMPLICATIONS IN SEVERELY BURNED PATIENTS****Corresponding author:** Akhmedov I. Adkham, [aiaxmedov@mail.ru](mailto:aiaxmedov@mail.ru)**For citation:** Akhmedov Adkham, Fayazov Abdulaziz. ENDOSCOPIC CHARACTERISTICS OF GASTRODUODENAL COMPLICATIONS IN SEVERELY BURNED PATIENTS. // Journal of Biomedicine and Practice. 2025, vol. 10, issue 2. <http://dx.doi.org/10.5281/zenodo.15198829>**ANNOTATION**

The use of 7 parameters as the main prognostic criteria for assessing the condition of a victim with extensive thermal trauma complicated by the development of burn disease is justified. A comprehensive analysis of these criteria makes it possible to create a scale for predicting the development of acute gastroduodenal complications, the high reliability of which will allow predicting the development of these complications and taking timely preventive measures.

**Keywords:** burn injury, burn disease, gastroduodenal complications, injury severity index.

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**ОҒИР КУЙГАНЛАРДА ЎТКИР ГАСТРОДУОДЕНАЛ АСОРАТЛАРИНИНГ  
ЭНДОСКОПИК ТАВСИФИ****АННОТАЦИЯ**

Куйиш касаллиги ривожланган беморлар ҳолатини баҳолашнинг асосий прогностик мезонлари сифатида 7 параметрдан фойдаланиш асосланган. Ушбу мезонларни ҳар томонлама таҳлил қилиш ўткир гастродуоденал асоратларни ривожланишини башорат қилиш миқёсини

яратишга имкон беради, уларнинг юқори ишончилиги ушбу асоратларнинг ривожланишини башорат қилиш ва ўз вақтида профилактика чораларини кўриш имконини беради

**Калит сўзлар:** куйиш жароҳати, куйиш касаллиги, гастродуоденал асоратлар, шикастланишнинг оғирлик кўрсаткичи.

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## ЭНДОСКОПИЧЕСКИЕ ХАРАКТЕРИСТИКИ ГАСТРОДУОДЕНАЛЬНЫХ ОСЛОЖНЕНИЙ У ТЯЖЕЛОБОЖЕННЫХ

### АННОТАЦИЯ

Обосновано применение 7 параметров в качестве основных прогностических критериев для оценки состояния пострадавшего с обширной термической травмой, осложненной развитием ожоговой болезни. Комплексный анализ данных критериев даёт возможность создания шкалы прогноза развития острых гастродуоденальных осложнений, высокая достоверность которой позволит прогнозировать развитие указанных осложнений и принимать своевременные профилактические меры

**Ключевые слова:** ожоговая травма, ожоговая болезнь, гастродуоденальные осложнения, индекс тяжести поражения.

Despite the advancements in modern surgery, burn care, and intensive care, the diagnosis, prevention, and treatment of acute gastroduodenal complications (GDC) in burn patients remain not fully understood, which necessitates the search for criteria for selecting an individualized approach for this category of patients [7,8,11]. The most common type of GDC in severely burned patients is hemorrhagic syndrome from the upper gastrointestinal tract [3,9]. The central link in the pathogenesis of erosive and ulcerative lesions of the stomach and duodenum in burn disease is mucosal damage, which is caused by an imbalance of protective mechanisms with increasing endotoxemia and impaired microcirculation in the submucosal layer [5,12].

The development of ischemic lesions, up to wall necrosis, manifests in clinical practice as various motor-evacuation disorders, bleeding from erosive and ulcerative lesions of the stomach and duodenum. All of the above determines the directions of therapeutic tactics in this category of patients, which should include drugs that improve the rheological parameters of blood, stabilize lipid peroxidation processes, and restore tissue respiration indicators [4,6]. According to Bobrovnikov A.E., acute erosions and ulcers of the gastrointestinal tract (GIT) are observed in 30.3-66.1% of cases in patients with burn trauma [1,10].

According to Wagner D.O., one of the unfavorable complications of burn disease is gastrointestinal bleeding, which occurs in 10-30% of victims with shock-inducing thermal trauma. Mortality in this category of patients can reach up to 80%, which makes this problem relevant in modern burn care [2,3].

**Objective of the study.** Predicting the likelihood of developing acute gastroduodenal complications in severely burned patients.

**Materials and Methods.** The overall study group consisted of 85 patients with extensive burns from 2020-2024, treated in the burn unit of the Samarkand City Medical Association.

Based on data on the course of burn disease (BD) (complicated and uncomplicated) with the development of acute gastroduodenal complications, all patients were divided into two groups: Group 1 consisted of 45 (53%) burn patients in whom burn disease developed with acute gastroduodenal complications within the first 7 days after injury; Group 2 consisted of 40 (47%) patients in whom

BD was not complicated by the development of acute gastroduodenal complications within the first 2 weeks after admission. Patients in Group 1 received H2-histamine receptor blockers.

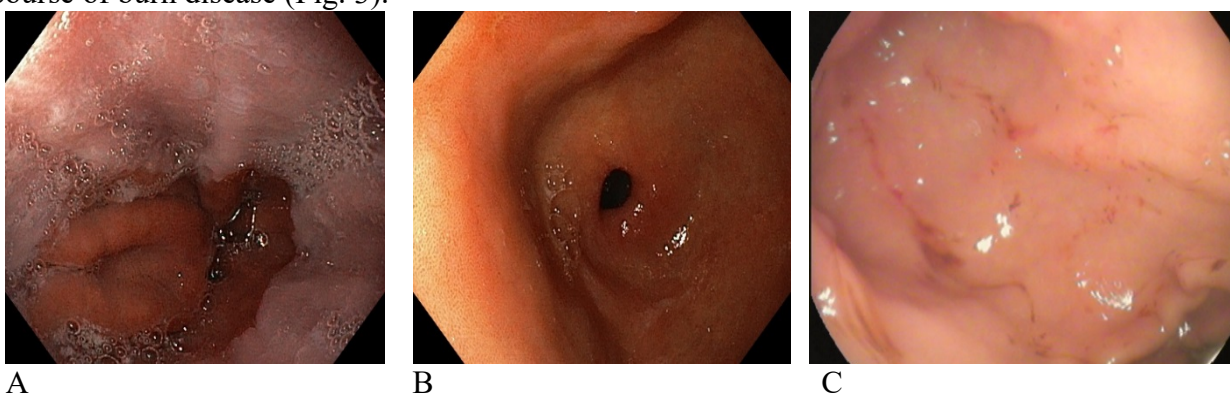
The results obtained from severely burned patients in both groups were taken into account in the subsequent analysis of the probability of developing acute gastroduodenal complications on the 3rd day from the time of injury, the course during the period of burn shock and burn toxemia, and were processed using methods of variational statistics.

**Results and discussion.** Given that the patients, prior to the burn injury, did not present with complaints regarding the digestive system and, in some cases, had no pathology in their history upon esophagogastroduodenoscopy (EGD), the changes that were identified during the endoscopic examination were considered directly related to the thermal factor. Among the patients in the main group, a number of gastroduodenal complications were observed, which were identified during EGD and were grouped into 3 categories: inflammatory lesions of the gastric and duodenal mucosa, erosive-ulcerative lesions, and motor-evacuation disorders. Moreover, a patient could have a complex of complications within the aforementioned groups, as well as combinations thereof. In the control group patients, the aforementioned complications were not observed, and therefore, we did not perform a comparative analysis between the groups.

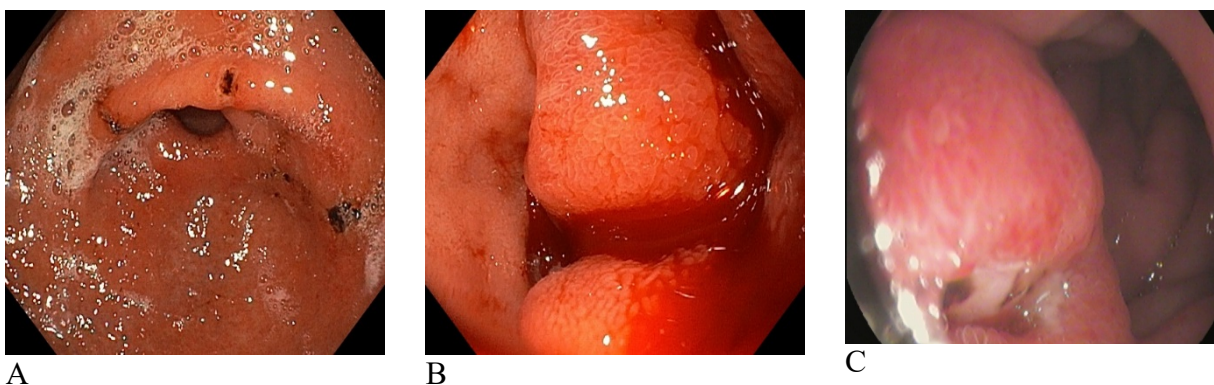
Among the inflammatory lesions of the gastric and duodenal mucosa, it is worth noting such conditions as reflux esophagitis, catarrhal and hemorrhagic gastroduodenitis (Fig. 1).

Among the erosive-ulcerative complications in the injured patients, EGD revealed both superficial (erosive) and deep (ulcerative) lesions, as well as their combinations (Fig. 2).

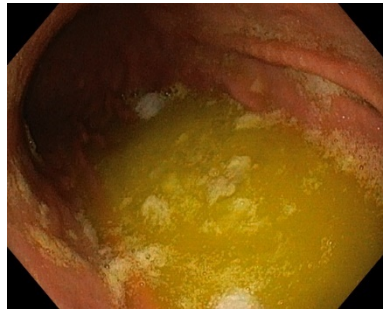
In addition to inflammatory and erosive-ulcerative complications from the mucosa and submucosal layer, motor-evacuation complications occupied a special place, which aggravated the course of burn disease (Fig. 3).



**Fig. 1.** Endoscopic picture of inflammatory lesions of the esophageal and gastric mucosa: A) Reflux esophagitis; B) Catarrhal gastritis; C) Hemorrhagic gastritis.



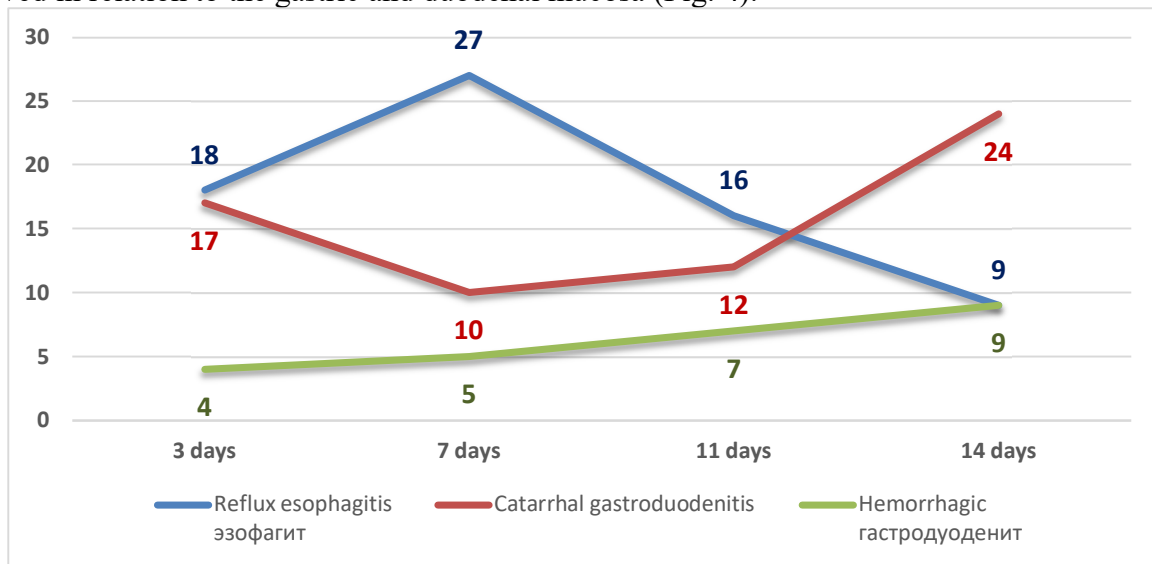
**Fig. 2.** Endoscopic picture of erosive-ulcerative lesions of the stomach and duodenum. A) Multiple erosions of the antrum of the stomach, complicated by stopped bleeding. B) Chronic ulcer of the duodenal bulb, complicated by ongoing bleeding; C) Chronic duodenal ulcer, complicated by stopped bleeding.



**Fig. 3.** Motor-evacuation complications in burn disease: duodeno-gastric bile reflux with gastrostasis.

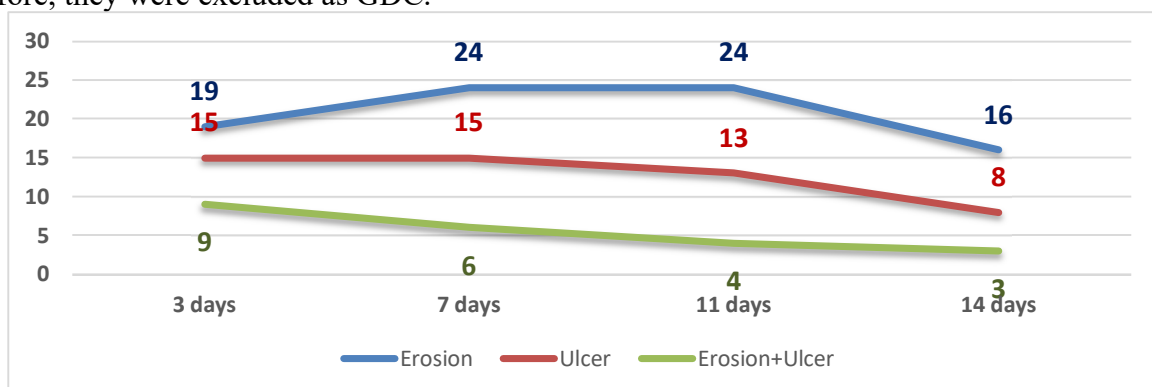
We studied the dynamics of the endoscopic picture with the presence of the above-mentioned groups of complications in burn disease.

At the same time, despite the ongoing intensive conservative therapy, inflammatory changes persisted for up to 2 weeks from the time of the burn injury. Moreover, while a decrease was characteristic for the inflammatory process in the esophageal mucosa, the opposite trend was observed in relation to the gastric and duodenal mucosa (Fig. 4).



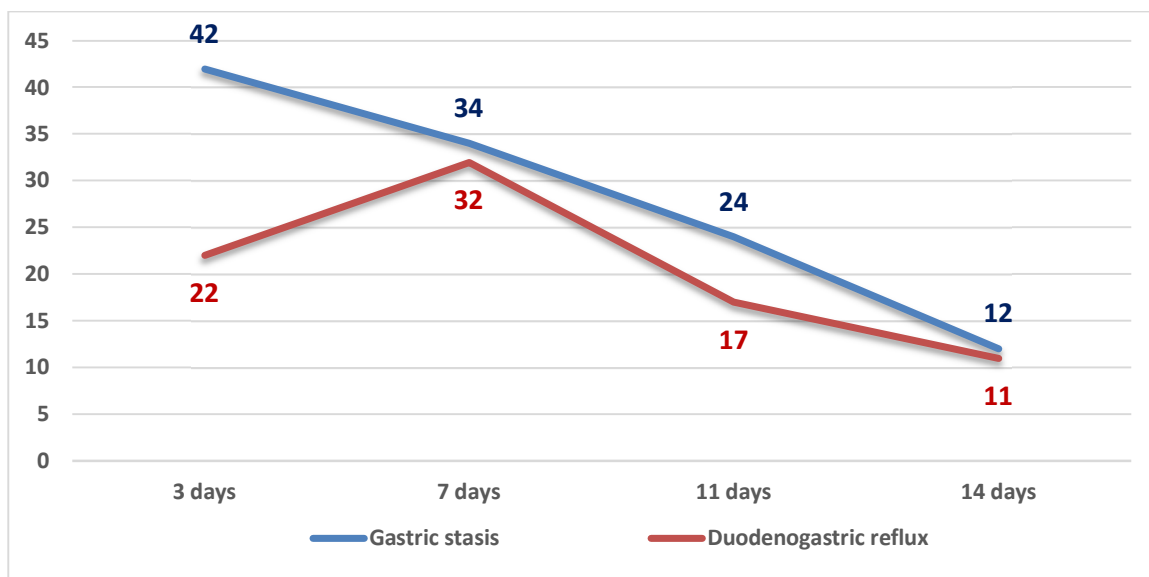
**Fig. 4.** Dynamics of inflammatory complications in burn disease (n=45).

Regarding erosive-ulcerative complications, it should be noted that on the 7th day from the time of the thermal injury, 100% of patients had superficial and/or deep lesions of the gastric and duodenal mucosa, which in some cases were complicated by hemorrhagic syndrome (Fig. 5). In the 2nd week, with a favorable course of burn disease, scarring of chronic duodenal ulcers was observed, and therefore, they were excluded as GDC.



**Fig. 5.** Dynamics of erosive-ulcerative complications in burn disease (n=45).

Motor-evacuation complications responded well to conservative therapy, and when analyzing their dynamics, a significant decrease in both the frequency of their detection and the severity of their expression was noted (Fig. 6).



**Fig. 6.** Dynamics of motor-evacuation complications in burn disease (n=45).

### Conclusions.

1. Among gastroduodenal complications in burn disease, the most common are inflammatory, erosive-ulcerative lesions and motor-evacuation disorders, and their severity varies depending on the timing of the burn disease and intensive therapy.

2. Catarrhal changes in the mucosa are sensitive to aggression and tend to rapidly penetrate into deeper layers of the gastrointestinal tract (GIT) organ. Therefore, timely antisecretory prophylaxis plays an important role in strengthening protective factors.

3. Pathogenetically, the faster the motor-evacuation activity in the gastrointestinal tract is restored, the better the blood circulation in the mucous membranes and the less frequently gastroduodenal complications occur.

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