

# Risk Factors for Complications of the Upper Gastrointestinal Tract in Thermal Injuries

**Fayazov Abdulaziz**– DSc, professor, Republican center for emergency medical care of the ministry of health of the Republic of Uzbekistan, Tashkent, Republic of Uzbekistan, e-mail:

abdulaziz.fayazov60@gmail.com

**Babajanov Akhmadjon**– DSc, docent, Samarkand State Medical Institute, Samarkand, Republic of Uzbekistan e-mail:babajanov.axmadjon@gmail.com

**Akhmedov Adkham**– assistant, Samarkand State Medical Institute, Samarkand, Republic of Uzbekistan e-mail:aiaxmedov@mail.ru

**Toirov Abdukhamid**–assistant, Samarkand State Medical Institute, Samarkand, Republic of Uzbekistan e-mail: toirov.abduxomit1971@gmail.com

**Djalolov Davlatshokh**– student, Samarkand State Medical Institute, Samarkand, Republic of Uzbekistan, e-mail: djalolov.d.a@gmail.com

**Annotation:**Acute symptomatic ulcers of the upper gastrointestinal tract, usually called acute, often superficial and multiple erosive and ulcerative lesions of the upper gastrointestinal tract, occurring in patients with severe burns<sup>12</sup>.

Acute erosions and ulcers are the main causes of complications of gastrointestinal bleeding (GI bleed) in the acute period of burn disease.The clinic of these ulcers is weakly expressed, almost asymptomatic, and they are manifested only by their complications, when admitted to the victims<sup>34</sup>. Therefore, the urgency of the problem lies in the timely diagnosis, treatment of acute ulcers and their prevention.

**Keywords:** gastrointestinal bleeding, thermal injuries, complications, gastroprotective therapy.

**Purpose of the research:** To clarify the causal factors of the development of complications of the upper gastrointestinal tract in patients after thermal injuries and to develop a system for the prevention and treatment of gastrointestinal complications in the early period of burn disease.

**Materials and methods of the research:**The research was conducted that included a retrospective analysis of the medical records of 90 patients who were treated in inpatient conditions in the department of combustiology of the Samarkand City Medical Association in 2012-2016 for thermal injuries.Upon

---

<sup>1</sup>Babajanov, A. S., Toirov, A. S., Muminov, F. O., Ahmedov, A. I., & Ahmedov, G. K. (2013). Choices in surgical treatment of thermal burns. *Science and world*, 24.

<sup>2</sup>Sultanbayevich, B. A., Suvonkulovich, T. A., & Ibodullayevich, A. A. (2020). TACTICS OF TREATMENT OF THYROID NODULES BASED ON THE GRADING SCALE. *Academy*, (4 (55)).

<sup>3</sup> Babajanov A.S., Akhmedov A.I., Salokhiddinov J.B., Musoev S.T., &Djalolov D.A. (2020). Risk factors affecting the prognosis of autodermplasty in patients with various skin defects. Актуальные проблемы фундаментальной, клинической медицины и возможности дистанционного обучения. DOI: 10.26739/conf\_01/05/2020

<sup>4</sup>Shonazarov, I., Karabaev, J., Akhmedov, S., Akhmedov, A., & Djalolov, D. ANALYSIS OF THE RESULTS OF SURGICAL TACTICS AND TREATMENT IN PATIENTS WITH ACUTE NECROTIC PANCREATITIS. *European Journal of Molecular & Clinical Medicine*, 7(03), 2020.

admission, the victims' medical history was studied, the area and depth of the burn were determined, and the severity of the patients' condition was assessed. In patients, the burn area was 20-45% of the body surface, the IIIab-IV degree of burns. To determine the severity of the patient, the Frank index was used<sup>5</sup>. In these patients, the Frank index was 45-90 c.u. According to the data obtained, a risk group for the development of gastrointestinal complications (the main group) was identified in the number of 48 patients. Anamnestic data included the results of endoscopy, the presence of a history of recurrent peptic ulcer disease, erosive gastroduodenitis, short-term or long-term use of NSAIDs and glucocorticosteroids, and preventive therapy for chronic disease<sup>67</sup>. Among the factors determining the features of first aid and prevention during burn injury, long-term ventilation, acute cardiovascular insufficiency, the development of DIC syndrome, unstable hemodynamics (hypotension), the use of long-term nasogastric intubation (more than 3 days) and enteral nutrition (more than 6 days), treatment with glucocorticoids and analgesics, the development of sepsis, liver and kidney failure were taken into account<sup>8</sup>. Patients with a burdened history underwent comprehensive prevention of complications of the upper gastrointestinal tract during the period of shock and toxemia of burn disease, aimed at maintaining and optimizing all factors that ensure the structural and functional integrity of the upper gastrointestinal tract. The remaining 42 patients made up the second, control group. Patients of this group did not receive preventive antisecretory therapy, which prevents the development of gastrointestinal complications, due to the lack of a burdening anamnesis. In both groups, during the period of burn disease, the state of the upper gastrointestinal tract was monitored by evaluating clinical manifestations and laboratory data.<sup>9</sup>

**Results and discussion:** In the main group, complications from the upper gastrointestinal tract were found in 26 (54.2%) patients. These included damage to the gastric mucosa and duodenum, motor disorders, and mucosal edema. Injuries to the gastric mucosa and duodenum were manifested by superficial multiple hemorrhagic erosions with a low risk of bleeding and/or localized ulcers with hemorrhagic complications. Bleeding occurred during the first week of stay in the intensive care unit<sup>101112</sup>. Severity distinguish occult blood (hidden blood in the gastric contents and feces) in 11 patients

<sup>5</sup>Angrisani, L., Santonicola, A., Galasso, G., D'Alessandro, A., Vitiello, A., & Iovino, P. (2020). Upper Gastrointestinal Bleeding After Bariatric Surgery. In *Emergency Surgery in Obese Patients* (pp. 131-138). Springer, Cham.

<sup>6</sup>Sayfullo Abdullaev, Abdukhomid Toirov Adkham Akhmedov, Davlatshokh Djalolov 2020. PROBLEMS OF SURGICAL TACTICS FOR THE TREATMENT OF DIABETIC FOOT SYNDROME. *International Journal of Advanced Science and Technology*. 29, 05 (Apr. 2020), 1836 - 1838.

<sup>7</sup>Iskandar Shonazarov; Sardor Murodullaev; Sunnatillokhon Kamoliddinov; Adkham Akhmedov; Davlatshokh Djalolov. "DIAGNOSIS AND TREATMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION WITH USING LAPAROSCOPIC METHOD". *European Journal of Molecular & Clinical Medicine*, 7, 3, 2020, 3192-3198.

<sup>8</sup>Abdullaev Sayfulla Abdullaevich, Babajanov Axmadjan Sultanbayevich, Kurbanov Erkin Yusufovich, Toirov Abduxomid Suvonkulovich, Abdullaeva Lola Sayfullaevna, Djalolov Davlatshokh Abduvokhidovich, Problems of Sepsis Diagnostic and Treatment in Diabetes Mellitus, *American Journal of Medicine and Medical Sciences*, Vol. 10 No. 3, 2020, pp. 175-178. doi: 10.5923/j.ajmms.20201003.09.

<sup>9</sup>Taveras, L. R., Weis, H. B., Weis, J. J., & Hennessy, S. A. (2020). Acute Gastrointestinal Bleeding. In *The SAGES Manual of Acute Care Surgery* (pp. 157-184). Springer, Cham.

<sup>10</sup>ФАЯЗОВ, А., САРИМСАКОВ, А., КАМИЛОВ, У., & ЮНУСОВ, Х. (2020). ПЕРСПЕКТИВЫ ПРИМЕНЕНИЯ РАНЕВЫХ ПОКРЫТИЙ В КОМБУСТИОЛОГИИ. *Shoshilinch tibbiyot axborotnomasi*, 2020, 13-tom, 4-son, 13(4), 86.

and overt bleeding (whole blood or "coffee grounds" stool with blood, or melena) in 5 patients, of whom clinically significant bleeding requiring surgical intervention was observed in 1 patient. The frequency and clinical manifestations of upper gastrointestinal tract injuries in the main and control groups are presented in table 1.

### Complications of the gastrointestinal tract in victims of thermal injuries

**Table 1**

Type of complication	Main group	Control group
Erosive lesions	5 (10,4%)	5 (11,9%)
Ulcerative lesions	2 (4,2%)	3 (7,1%)
Catarrhal-erosive lesions	3 (6,2%)	3 (7,1%)
Erosive and ulcerative lesions	16 (33,3%)	10 (23,8%)
Total	26 (54,2%)	21 (52,4%)

The table shows that the total number of patients with complications in the main and control groups is 47, which is an average of 52.2% of all victims.

The results of determining the damaging significance of individual factors are presented in table 2.

### Anamnestic risk factors

**Table 2**

Risk factors	GI bleed N=26	Development of gastrointestinal complications N=47
The admission of ulcerogenic drugs	7,3%	13,2%
The cardiovascular system	5,2%	9,4%
Broncho-pulmonary system	3,6%	6,5%
Urinary system	2,1%	3,8%
Gastrointestinal tract	10,7%	19,3%
<b>Total (%)</b>	<b>28,9%</b>	<b>52,2%</b>

### Assessment of the damaging significance of risk factors during the burn injury period

**Table 3**

Risk factors	GI bleed N=26	Development of gastrointestinal complications N=47
Long-term artificial lung ventilation	4,3%	7,8%

<sup>11</sup>Фаязов, А. Д., Шарипова, В. Х., Нарзиев, М. М., & Назарова, Ф. С. (2019). ОСОБЕННОСТИ ИНФУЗИОННОЙ ТЕРАПИИ У ОБОЖЖЕННЫХ БОЛЬНЫХ С КРИТИЧЕСКИМИ ТЕРМИЧЕСКИМИ ПОРАЖЕНИЯМИ. In *Жизнеобеспечение при критических состояниях* (pp. 105-106).

<sup>12</sup>Нарзиев, М. М., Фаязов, А. Д., Абдуллаев, У. Х., & Камилов, У. Р. (2019). ПРОБЛЕМА ГИПЕРМЕТАБОЛИЗМА У БОЛЬНЫХ С КРИТИЧЕСКИМИ ОЖОГАМИ. In *Жизнеобеспечение при критических состояниях* (pp. 74-74).

Long-standing nasogastric tube	3,9%	7,1%
DIC syndrome	3,2%	5,8%
Acute heart failure	2,2%	3,9%
Sepsis	3,4%	6,1%
Long-term enteral nutrition	3,7%	6,7%
Treatment with glucocorticoids	3,8%	6,9%
Liver failure	1,2%	2,2%
Hypotension	1,8%	3,2%
Kidney failure	1,4%	2,5%
<b>Total(%):</b>	<b>28,9%</b>	<b>52,2%</b>

The indicators in tables 2 and 3 indicate that long-term artificial lung ventilation, long-term nasogastric probes, as well as the development of multiple organ syndrome and sepsis were the leading ones. Treatment with glucocorticoids, long-term enteral nutrition also showed a high causal relationship. Among the anamnestic factors, the most important for the development of complications from the upper gastrointestinal tract was the presence of a history of recurrent peptic ulcer disease.

Of course, our observations explain the frequency of gastrointestinal complications in thermal injuries by the increased level of preventive measures. Currently, the main areas of prevention and treatment of stress injuries are antisecretory and organoprotective therapy, which aims to maintain a pH above 3.5 (up to 5.8), normalize gastric motility, and increase the stability of the mucosal barrier. It was found that proton pump blockers have the best antisecretory function in stress injuries of the upper gastrointestinal tract.

Gastroprotectors include a group of agents that act directly on the gastric mucosa and reduce or prevent the damaging effect of chemical or physical factors on it. The most studied drug of this group, used for the prevention of stress ulcers, is almagel, maalox, venter.

### Conclusions:

Thus, the identification of the risk group for the development of gastrointestinal complications in the early period of burn disease and their prevention are an obligatory part of the treatment of this severe category of patients. Among the risk factors, the most damaging is the long-term artificial ventilation of the lungs, long-term nasogastric probes, as well as the development of multiple organ syndrome and sepsis. Treatment with glucocorticoids, long-term enteral nutrition, showed a high causal relationship. The main directions of prevention and treatment of gastrointestinal complications are antisecretory therapy, aimed at maintaining a pH above 3.5 (up to 6.0), and gastroprotective therapy, which increases the stability of the mucosal barrier.

### References

1. Babajanov, A. S., Toirov, A. S., Muminov, F. O., Ahmedov, A. I., & Ahmedov, G. K. (2013). Choices in surgical treatment of thermal burns. *Science and world*, 24.
2. Sultanbayevich, B. A., Suvonkulovich, T. A., & Ibodullayevich, A. A. (2020). TACTICS OF TREATMENT OF THYROID NODULES BASED ON THE GRADING SCALE. *Academy*, (4 (55)).
3. Babajanov A.S., Akhmedov A.I., Salokhiddinov J.B., Musoev S.T., & Djalolov D.A. (2020). Risk factors affecting the prognosis of autodermoplasty in patients with various skin defects. *Актуальные*

проблемы фундаментальной, клинической медицины и возможности дистанционного обучения. DOI: 10.26739/conf\_01/05/2020

4. Shonazarov, I., Karabaev, J., Akhmedov, S., Akhmedov, A., & Djalolov, D. ANALYSIS OF THE RESULTS OF SURGICAL TACTICS AND TREATMENT IN PATIENTS WITH ACUTE NECROTIC PANCREATITIS. *European Journal of Molecular & Clinical Medicine*, 7(03), 2020.
5. Angrisani, L., Santonicola, A., Galasso, G., D'Alessandro, A., Vitiello, A., & Iovino, P. (2020). Upper Gastrointestinal Bleeding After Bariatric Surgery. In *Emergency Surgery in Obese Patients* (pp. 131-138). Springer, Cham.
6. SayfulloAbdullaev, AbdukhomidToirovAdkhamAkhmedov,DavlatshokhDjalolov 2020. PROBLEMS OF SURGICAL TACTICS FOR THE TREATMENT OF DIABETIC FOOT SYNDROME. *International Journal of Advanced Science and Technology*. 29, 05 (Apr. 2020), 1836 - 1838.
7. IskandarShonazarov; SardorMurodullaev; SunnatillokhonKamoliddinov; AdkhamAkhmedov; DavlatshokhDjalolov. "DIAGNOSIS AND TREATMENT OF ADHESIVE SMALL BOWEL OBSTRUCTION WITH USING LAPAROSCOPIC METHOD". *European Journal of Molecular & Clinical Medicine*, 7, 3, 2020, 3192-3198.
8. Abdullaev Sayfulla Abdullaevich , Babajanov Axmadjan Sultanbayevich , Kurbanov Erkin Yusufovich , Toirov Abduxomid Suvonkulovich , Abdullaeva Lola Sayfullaevna , Djalolov Davlatshokh Abduvokhidovich , Problems of Sepsis Diagnostic and Treatment in Diabetes Mellitus, *American Journal of Medicine and Medical Sciences*, Vol. 10 No. 3, 2020, pp. 175-178. doi: 10.5923/j.ajmms.20201003.09.
9. Taveras, L. R., Weis, H. B., Weis, J. J., & Hennessy, S. A. (2020). Acute Gastrointestinal Bleeding. In *The SAGES Manual of Acute Care Surgery* (pp. 157-184). Springer, Cham.
10. ФАЯЗОВ, А., САРИМСАКОВ, А., КАМИЛОВ, У., & ЮНУСОВ, Х. (2020). ПЕРСПЕКТИВЫ ПРИМЕНЕНИЯ РАНЕВЫХ ПОКРЫТИЙ В КОМБУСТИОЛОГИИ. *Shoshilinch tibbiyot axborotnomasi*, 2020, 13-tom, 4-son, 13(4), 86.
11. Фаязов, А. Д., Шарипова, В. Х., Нарзиев, М. М., & Назарова, Ф. С. (2019). ОСОБЕННОСТИ ИНФУЗИОННОЙ ТЕРАПИИ У ОБОЖЖЕННЫХ БОЛЬНЫХ С КРИТИЧЕСКИМИ ТЕРМИЧЕСКИМИ ПОРАЖЕНИЯМИ. In *Жизнеобеспечение при критических состояниях* (pp. 105-106).
12. Нарзиев, М. М., Фаязов, А. Д., Абдуллаев, У. Х., & Камилов, У. Р. (2019). ПРОБЛЕМА ГИПЕРМЕТАБОЛИЗМА У БОЛЬНЫХ С КРИТИЧЕСКИМИ ОЖОГАМИ. In *Жизнеобеспечение при критических состояниях* (pp. 74-74).
13. Bazarova D. Some problems of counteracting crimes related to laundering of illegal proceeds in Uzbekistan *Journal of Advanced Research in Dynamical and Control Systems*. Volume 11, Issue 7, 2019, Pages 873-885
14. Ismailova, Z., Choriev, R., Ibragimova, G., Abdurakhmanova, S., & Abdiev, N. (2020). Competent model of Practice-oriented education of students of the construction profile. *Journal of Critical Reviews*. Innovare Academics Sciences Pvt. Ltd. <https://doi.org/10.31838/jcr.07.04.85>
15. Ismailova, Z., Choriev, R., Musurmanova, A., & Aripjanova, M. (2020). Methods of training of teachers of university on advanced training courses. *Journal of Critical Reviews*. Innovare Academics Sciences Pvt. Ltd. <https://doi.org/10.31838/jcr.07.05.85>
16. Ismailova, Z., Choriev, R., Salomova, R., & Jumanazarova, Z. (2020). Use of economic and geographical methods of agricultural development. *Journal of Critical Reviews*. Innovare Academics Sciences Pvt. Ltd. <https://doi.org/10.31838/jcr.07.05.84>

17. Isakov, A., Tukhtamishev, B., & Choriev, R. (2020). Method for calculating and evaluating the total energy capacity of cotton fiber. IOP Conference Series: Earth and Environmental Science, 614(1), 012006
18. Davirov, A., Tursunov, O., Kodirov, D., Baratov, D., & Tursunov, A. (2020). Criteria for the existence of established modes of power systems. IOP Conference Series: Earth and Environmental Science, 2020, 614(1), 012039
19. Obidov, B., Choriev, R., Vokhidov, O., & Rajabov, M. (2020). Experimental studies of horizontal flow effects in the presence of cavitation on erosion-free dampers. IOP Conference Series: Materials Science and Engineering, 883(1), 012051
20. Khasanov, B., Choriev, R., Vatin, N., & Mirzaev, T. (2020). The extraction of the water-air phase through a single filtration hole. IOP Conference Series: Materials Science and Engineering, 2020, 883(1), 012206
21. Shokhrud F. Fayziev The problem of social stigma during a pandemic caused by COVID-19 International Journal of Advanced Science and Technology Vol. 29, No. 7, (2020), pp. 660-664 <http://serisc.org/journals/index.php/IJAST/article/view/13965/7188>
22. Fayziyev Shokhrud Farmonovich Medical law and features of legal relations arising in the provision of medical services. International journal of pharmaceutical research Volume 11, Issue 3, July - Sept, 2019 P. 1197-1200 doi:10.31838/ijpr/2019.11.03.088 <http://www.ijpronline.com/ViewArticleDetail.aspx?ID=11016>
23. Bryanskaya Elena, Fayziev Shokhrud, Altunina Anna, Matiukha Alena Topical Issues of an Expert Report in the Process of Proving in a Criminal Examination. International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-9 Issue-1, October 2019 5345-5349 DOI: 10.35940/ijeat.A2946.109119 <https://www.ijeat.org/wp-content/uploads/papers/v9i1/A2946109119.pdf>
24. Fayziev Shokhrud (2019) Legal Aspects of Transplantology in the Republic of Uzbekistan. Systematic Reviews in Pharmacy, ISSN: 0976-2779, Vol: 10, Issue: 2, Page: 44-47 doi:10.5530/srp.2019.2.08 <http://www.sysrevpharm.org/fulltext/196-1575419211.pdf?1586863081>
25. Tulaganova, G. Some issues of observance of international legal norms of fight against legalization of criminal incomes in the Republic of Uzbekistan Journal of Advanced Research in Dynamical and Control Systems 12(2 Special Issue), c. 143-155
26. Bekchanov D; Kawakita H; Mukhamediev M; Khushvaktov S; Juraev M. Sorption of cobalt (II) and chromium (III) ions to nitrogen- and sulfur- containing polyampholyte on the basis of polyvinylchloride /Polymers for Advanced Technologies 2021 <https://doi.org/10.1002/pat.5209>
27. Davron, B., Mukhtar, M., Nurbek, K., Suyun, X., Murod, J. Synthesis of a New Granulated Polyampholyte and its Sorption Properties. *International Journal of Technology*. Volume 11(4), pp. 794-803. ., (2020) <https://doi.org/10.14716/ijtech.v11i4.4024>
28. Mukhamediev, M.G., Bekchanov, D.Z. New Anion Exchanger Based on Polyvinyl Chloride and Its Application in Industrial Water Treatment. Russ J Appl Chem 92, 1499–1505 (2019). <https://doi.org/10.1134/S1070427219110053>
29. Mukhamediev, M.G., Auelbekov, S.A., Sharipova, Z.T. et al. Polymer complexes of gossypol and their antiviral activity. Pharm Chem J 20, 276–278 (1986). <https://doi.org/10.1007/BF00758817>
30. Ikramova, M.E., Mukhamediev, M.G., Musaev, U.N. Complexation of hydrazine- and phenylhydrazine-modified nitron fibers with iodine/ Plasticskie Massy: Sintez Svoystva Pererabotka Primenenie, (12), crp. 41–45 (2004)
31. Gafurova, D.A., Khakimzhanov, B.S., Mukhamediev, M.G., Musaev, U.N. Sorption of Cr(VI) on the anion-exchange fibrous material based on nitron. Russian Journal of Applied Chemistry, 75(1), crp. 71–74, (2002)

- 32.** Rustamov, M.K., Gafurova, D.A., Karimov, M.M. et al. Application of ion-exchange materials with high specific surface area for solving environmental problems. Russ J Gen Chem 84, 2545–2551 (2014). <https://doi.org/10.1134/S1070363214130106>