OUR MODERN APPROACHES TO THE TREATMENT OF DEEP BURNING PATIENTS.

Elmuradov Akhtam Norbekovich, Avazov Abdurakhim Abduraxmonovich
Assistant of the Department of Surgical Diseases No. 2 of the Medical Faculty
Samarkand State Medical University

Annotation

The current literature data on the early surgical treatment of severely burned patients, the definition and methods of early necrectomy are presented. The pathogenetic substantiation of early surgical interventions for burn disease is given, the use of which leads to an improvement in the results of treatment.

Keywords: severely burned, burn disease, deep burns, early surgical treatment, early necrectomy.

The treatment of burn patients is still a complex medical, social and economic problem. The proportion of burn injury victims has doubled over the past 31 years [48], accounting for 5–12% among peacetime injuries and occupying 2nd–3rd place in the structure of injuries [2]. Given the rapid pace of technological progress, in the near future it can be assumed that over an average of 60 years of life, each of the 50 inhabitants of the planet may be hospitalized for thermal injury, while one in 550 is more likely to die [46]. Studies by the same authors indicate that in the United States about 2 million people annually receive a burn injury, and 20% of them are treated in specialized hospitals. Among the category under consideration, there is a high proportion of victims with deep and extensive burns, the treatment of which is the most difficult problem of modern combustiology. The main thing in the treatment of patients with thermal injury is the earliest possible restoration of the lost skin [3, 4, 7, 23, 44]. The solution to this problem is implemented by two approaches: 1) early surgical treatment (RCL), which consists in the excision of necrotic tissues, followed by one-stage or delayed autodermoplasty; 2) conservative preparation of wounds, which involves the use of necrolytic preparations that promote the rejection of necrotic tissues, followed by dermoplasty, or plastic closure of granulating wounds after spontaneous rejection of necrotic tissues due to the biological patterns of the evolution of the wound process. Deep burns do not fundamentally differ

from traumatic wounds of various origins, where nonviable tissues are present [22, 36]. As far back as 1898, P. Friedrich substantiated the justification for surgical treatment of an infected wound in an experiment by the desire to overtake the "infection with a knife". The first attempts at surgical treatment of burns were made at the beginning of the last century, however, the real successful results of early necrectomy (RN) were achieved later [44,46,49]. Despite the theoretical validity and, it seemed, obvious advantages, RCL of severely burned patients has not found due wide distribution in the CIS countries, although the possibilities and implementation of this treatment method are constantly discussed in specialized literature, at congresses and conferences [1, 27, 28, 32, 34, 44, 47]. The most significant reasons for refusing early excision of necrotic tissues of burn wounds are: 1) the lack of objective clinical verification of the depth of the lesion on the first day after thermal injury. The use of ultrasound diagnostic methods [21, 54, 59, 65, 69, 71, 73], dyes and fluorescents (41), thermography [18], magnetic resonance imaging [11], histological studies [19] is limited due to their low information content or high cost. Therefore, in practice, as a rule, the depth of the lesion is assessed by appearance, signs indicating a violation of blood circulation, the state of pain sensitivity (needle prick, applications with irritating liquids, hair-pulling test). It is necessary to take into account the polymorphism and mosaicity of the depth of the lesion, and, as a result, the "unpredictability" of the viability of the epithelium of skin derivatives, which causes the frequency of errors in determining the dermal lesion [16]. The nature of necrosis also affects the error rate in diagnosing the depth of the burn. So, with wet necrosis in the first 3-5 days, the correct determination of the depth of the lesion was noted in 39.7% of those burned, with dry necrosis, early diagnosis was reliable in 52.1% [47]; 2) traumatic ROP and the accompanying significant blood loss, which depends on the method of excision of necrotic tissues, methods of hemostasis, the duration of the operation, the age of the burnt, the presence of concomitant diseases. In addition, with extensive necrectomy with simultaneous autodermoplasty, there is a high risk of an unfavorable outcome due to additional loss of the skin in the donor areas and blood loss when taking autodermal grafts [46]; 3) late hospitalization in a specialized hospital, due to insufficient knowledge of surgeons about the possibility of RCL [21]; 4) lack of sufficient blood and protein

preparations [28]; 5) the impossibility of implementing an adequate anesthesiology and resuscitation aid, suggesting optimal methods of anesthesia and finding burned patients in the conditions of the intensive care unit with constant monitoring of hemodynamics and laboratory parameters [32]; 6) absence of allogeneic skin banks [40]; 7) the basic principle of medicine " Primum non nocere" that puts pressure on surgeons. Fear of "harm" in the case of early excision of the scab, an increase in wound surfaces when taking autodermal grafts, the risk of their rejection due to non-radical excision of necrosis, or detachment with hematomas leads to waste in the position of conservative methods of preparing burn wounds, when subsequent autodermotransplantation onto prepared granulations suggests a positive result. But such a state of the wound can not always be achieved, since “with extensive and deep burns, the expectation of spontaneous tissue rejection is associated with a restless feeling of an outside observer of the patient’s gradually deteriorating condition. Death may occur earlier than surgical intervention becomes possible” [45]. It is an axiom that the results of the treatment of burn disease depend on the timing of the restoration of the lost skin, therefore RCL, under certain indications, should be more actively introduced into clinical practice. The issues of indications and contraindications for RCL, terms and volumes of ROP, methods and time of closing burn wounds remain debatable [15, 48]. Indications for early excision of necrotic tissues occur with: 1) significantly deep burns; 2) the absence of burn shock, early sepsis and acute inflammation in wounds and surrounding tissues intact from burns; 3) terms from the moment of receiving a burn, not exceeding 5-7 days; 4) localization of burns on the extremities. Early necrectomy is not indicated for: 1) an extremely severe condition of the burned person, due to the extensiveness of the lesion; 2) severe thermochemical damage to the upper respiratory tract; 3) generalization of infection, septic course of the disease; 4) development of wet necrosis in burn wounds; 5) localization of deep burns in the neck, armpits, perineum, scalp. ROP can be performed with stabilization of hemodynamics and external respiration function, sufficient diuresis, positive dynamics of laboratory blood parameters. Analyzing the literature data [26, 31, 41, 46], the optimal time for early excision of non-viable tissues in severely burned patients is 5-7 days from the moment of injury, since after the recovery from shock, the

body's compensatory capabilities remain, the patient's condition remains stable, local inflammation and regional edema is expressed moderately, there is less probability of errors in determining the boundaries of a deep lesion. Excision of necrotic tissues along the line of demarcation is possible only at a later date, but even then purulent fusion of tissues, a pronounced local inflammatory reaction and worsening of the condition are noted. Data on possible volumes of necrectomy are contradictory. However, due to the traumatic nature of such operations, according to most combustiologists [35, 47], the area of simultaneously excised tissues should not exceed 10-15% of the body surface with appropriate anesthetic and transfusiological support in a specialized hospital . Important points in determining the volumes of CR are the localization of burns, the features of operational equipment. Depending on the volume of excised tissues, RH is divided into: 1) small - removal of the scab up to 5% of the body surface; 2) limited in area - excision of non-viable tissues in an area of 5-10%; 3) extensive - excision of the scab from 10 to 20% of the body surface; 4) large-scale - removal of necrotic tissues with an area of more than 20% [31]. Operational and technical assistance in ROP is carried out in the following ways: tangential (layered) excision of the scab to a certain depth, or simultaneous excision to obviously viable tissues (subcutaneous tissue, fascia, muscles). Tangential excision is indicated for the mosaic nature of the lesion, which contributes to the preservation of epithelial elements of skin derivatives, allows to reveal the depth of the lesion, and reduces compression of the underlying deep layers of the skin. To perform tangential necrectomy, rotary-type dermatomes are used with a gap set to a tissue cut thickness of 0.3-1.0 mm, or necrotomes (such as a Gumby knife) with a cut width limiter of 5-10 cm and a gap set to a thickness of 0.2-1, 0 mm, producing layer-by-layer removal of necrotic tissues. To reduce blood loss during tissue excision, electrosurgical instruments are also used [30], laser surgical units of crystalline (neodymium) continuous action and gas (carbon dioxide) pulsed type (10, 11), and a plasma scalpel [38]. It was noted that when using a laser beam and a plasma scalpel, a 3-5-fold decrease in blood loss occurs due to the cauterization of blood vessels up to 3 mm in diameter occurring along the excision, but the excision time increases by 2 times. However, these methods, due to the difficulties of technical support, have not yet become widespread, despite their apparent promise.

Scalpel excision involves the execution of fringing and segmental incisions to the depth of necrosis (within the dermis, to the fascia, muscles). The edges of each segment are sequentially taken on clamps and lifted, then the entire array of necrotic tissues is excised segment by segment. Stopping bleeding is carried out by ligation, stitching, or electrocoagulation. Blood loss in ROP is one of the factors limiting their widespread use, averaging 1 ml per 1 cm2 of the excised wound [5,7,9,11,15]. Consequently, when excising non-viable tissues with an area of 5-10% of the body surface, intraoperative blood loss reaches up to 1000.0 ml, and in some cases - in case of violation of the blood coagulation system - significantly exceeding the indicated indicators. Removal of necrotic tissue on the extremities is expediently performed under a tourniquet. Smaller blood loss occurs when the scab is excised at the level of subcutaneous tissue and fascia, since diffuse bleeding is not observed. The amount of blood loss in ROP can be leveled using the method of autohemotransfusion - transfusion of blood taken from a patient before surgery and reinfused during or after surgery. Hemodilution performed in the preoperative period by introducing an excess amount of fluid into the vascular bed leads to relatively less blood loss. It is also possible to collect (utilize) blood during necrectomy on the extremities - before excision of necrosis, a vein is punctured in intact skin areas distal to the tourniquet, receiving up to 75-110 ml of blood in the shoulder area and 130-160 ml in the thigh area, followed by reinfusion after hemostasis [41]. And, of course, timely and adequate compensation for blood loss is necessary to prevent acute hemodynamic disorders during surgery and postoperative anemia. Methods and time of recovery of the skin after the performed ROP are different and depend on the chosen method of excision of the scab, the localization of the lesion, and the availability of donor resources. There are primary, primary delayed, secondary early and secondary late skin grafts [14]. The first two types of autodermoplasty are performed on the wound after necrectomy (immediately after it, or after a few days, but before the appearance of granulations). Secondary early plasty is performed on a granulating wound surface after rejection or surgical removal of non-viable tissues from 2-4 weeks after thermal injury. With secondary late plasty, plastic closure of the wound is performed after the removal of granulations. The main method of restoring the skin after ROP is transplantation of

solid or perforated flaps of split autoskin [29, 31]. Non-free skin grafting is used only after excision of the affected deep anatomical structures, mainly on the hands. Also in similar cases, plasty with flaps with axial blood supply is used [29]. In severely burned patients, even despite the use of economical methods of skin grafting, there is a shortage of donor skin resources already with deep burns of 16% of the body surface [41]. In this regard, an important link in the treatment is the use of wound dressings to prevent infection of wounds and depletion of the body, as a preparation for subsequent skin grafting, in order to quickly epithelialize donor sites. Wound dressings include allogeneic human skin (cadaveric or from a living donor) [45, 46], xenoskin [17, 33, 43], embryonic membranes, and synthetic skin substitutes [31]. Allogeneic cadaveric skin is most often used both as a temporary wound covering and in combined plasty, when autologous and allogeneic skin in various combinations are simultaneously transplanted onto the wound (alternating strips of auto- and allogeneic skin - the Moulin-Jackson method, or the "double mesh" method). when, after excision of the scab, perforated 1:6-1:10 autoskin flaps are transplanted onto the wounds, over which the allo-skin is applied) [40]. Promising methods for restoring the skin using biotechnological methods - grown in vitro keratinocytes and allogeneic fibroblasts, but their use is limited due to the need for expensive equipment and the complexity of the process [6, 9, 19, 20, 39,41]. RCL has found its place in the treatment of severely burned children [18, 24, 27,32]. Excision of devitalized tissues and replacement of the resulting defects leads to a decrease in the possibilities of complications in all periods of burn disease, and is the prevention of cicatricial contractures and deformities [8, 12, 13, 42, 49]. However, there is an opinion [34] that after ROP, severe cicatricial deformities are formed in children, and in the absence of a threat to life, delayed skin grafting should be the method of choice. Significant difficulties in the treatment of burned elderly and senile age are not only extensive, but also local burns. But even in this group of patients, active surgical tactics, based on ROP with simultaneous or delayed skin grafting, can reduce the duration of treatment and reduce mortality from purulent complications of burn disease by 1.5 times [5, 25, 37]. Thus, RCL of severely burned patients provides for the removal of a burn scab before the development of infectious complications due to the fact that infection is

one of the leading factors determining the pathogenesis of not only burn wounds, but also burn disease in general. A significant mass of devitalized tissues leads to intensive growth of microorganisms that contribute to the development of metastatic purulent foci in the internal organs. Microbial toxins and tissue breakdown products play a significant role in the development of sepsis. The terms of healing of burn wounds are determined not only by the area of burns, but by the mass of dead tissues and the speed of cleansing wound surfaces from burn eschar with subsequent dermotransplantation. Excision of necrotic tissues contributes to the interruption of burn disease in the stage of toxemia and the prevention of the development of septicotoxemia. Optimal conditions are created for engraftment of dermografts. Therefore, the implementation of RN in burn disease leads to a decrease in mortality, a reduction in terms and an improvement in the functional results of treatment. Carrying out early necrectomy in burn disease is pathogenetically justified, but has its own characteristics, the observance of which determines the course and outcome of the disease in severely burned patients.

Литература:

1. Babajanov A. S. et al. Choices in surgical treatment of thermal burns //Science and world. – 2013. – T. 24.
2. Elmuradov A. N., ShK A., Shakirov B. M. Diagnosis and Surgical Treatment of Patients with Closed Pancre-atic Injuries //J Surg Sci Oper Care. – 2022. – T. 4. – C. 101.
3. Elmuradov A. Postcolonial/Decolonial Critique and the Theory of International Relations //MGIMO Review of International Relations. – 2021. – T. 14. – №. 3. – C. 23-38.
4. Elmuradov A. Uzbekistan Between Tradition and Modernity: Subject and Symbolic Order //Central Asia After Three Decades of Independence: Politics and Societies Between Stability and Transformation. – 2021. – T. 15. – C. 21.
5. Gulamov O. M. et al. Modern methods of diagnosis and treatment of barrett esophagus //Doctor's herald. – 2020. – T. 2. – C. 94.

6. Khasanjanova F. O. et al. Evaluation of the effectiveness of thrombolytic therapy in men with acute coronary myocardial infarction in young age //Central Asian Journal of Medical and Natural Science. – 2021. – Т. 2. – №. 1. – С. 144-149.
7. Khasanzhanova F. O. et al. EVALUATION OF THE EFFECTIVENESS OF THROMBOLYTIC THERAPY IN MEN WITH ACUTE MYOCARDIAL INFARCTION IN YOUNG AGE //Archive of Conferences. – 2021. – Т. 15. – №. 1. – С. 48-52.
8. Muzaffarovna Y. G. MODERN PEDAGOGICAL TECHNOLOGIES IN TEACHING ENGLISH //Central Asian Research Journal for Interdisciplinary Studies (CARJIS). – 2022. – Т. 2. – №. Special Issue 4. – С. 160-164
9. Ruziboev S. A. et al. Results Of Treatment Of Acute Diffuse Purulent Peritonitis Using Laparostomy //The American Journal of Medical Sciences and Pharmaceutical Research. – 2020. – Т. 2. – №. 11. – С. 66-71.
10. Vodolazov D. Y., Elmuradov A., Peeters F. M. Critical currents of the phase slip process in the presence of electromagnetic radiation: Rectification for time asymmetric ac signal //Physical Review B. – 2005. – Т. 72. – №. 13. – С. 134509.
11. Vodolazov D. Y., Elmuradov A., Peeters F. M. Critical currents of the phase slip process in the presence of electromagnetic radiation: Rectification for time asymmetric ac signal //Physical Review B. – 2005. – Т. 72. – №. 13. – С. 134509.
12. Алимов Ж. И., Тухтаев Ж. К., Тоиров А. С. ФЛЕБЭКТОМИЯ В ЛЕЧЕНИИ ВАРИКОТРОМБОФЛЕБИТА //Молодежь и медицинская наука в XXI веке. – 2017. – С. 348-349.
13. Ачилов М. и др. МАЛИГНИЗАЦИЯЛАШГАН ГАСТРОДУОДЕНАЛ ЯРАЛАРДАН ҚОН КЕТИШДА ХИРУРГИК ТАКТИКА //Журнал вестник врача. – 2021. – Т. 1. – №. 4 (101). – С. 19-23.
14. Ачилов М. и др. Профилактика и лечение повышенного внутрибрюшного давления у больных с перитонитом //Журнал вестник врача. – 2021. – Т. 1. – №. 1 (98). – С. 17-21.

15. Ачилов М. Т. и др. лечение повышенного внутрибрюшного давления у больных с перитонитом/Доктор ахборотномаси, 1 (98), 2021 //DO1. – Т. 10. – С. 16-20.
16. Бабажанов А. и др. Эффективность методов лечения различных видов изолированного варикозного расширения вен нижних конечностей //Журнал проблемы биологии и медицины. – 2017. – №. 4 (97). – С. 20-23.
17. Бабажанов А. и др. Эффективность хирургического лечения спаечной кишечной непроходимости //Журнал проблемы биологии и медицины. – 2014. – №. 2 (78). – С. 12-15.
18. Бабажанов А. С. и др. АНАЛИЗ РЕЗУЛЬТАТОВ ЛЕЧЕНИЯ БОЛЬНЫХ С ЖЕЛЧЕИСТЕЧЕНИЕМ ПОСЛЕ ХОЛЕЦИСТЭКТОМИИ //Наука и Мир. – 2017. – Т. 1. – №. 5. – С. 75-78.
19. Бабажанов А. С. и др. Анализ результатов методов герниопластики при боковых миофасциальных дефектах живота //ПРИОРИТЕТНЫЕ НАПРАВЛЕНИЯ РАЗВИТИЯ НАУКИ И ОБРАЗОВАНИЯ. – 2018. – С. 137-140.
20. Бабажанов А. С. и др. Определение показаний к эндовазальной лазерной коагуляции (ЭВЛК) магистральных подкожных вен при варикозной болезни //Наука и мир. – 2016. – Т. 3. – №. 6. – С. 25-28.
21. Бабажанов А. С. и др. РЕЗУЛЬТАТЫ ЭФФЕКТИВНОСТИ ПРИМЕНЕНИЯ МАЛОИНВАЗИВНЫХ МЕТОДОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ ОСТРОГО ХОЛЕЦИСТИТА У БОЛЬНЫХ ПОЖИЛОГО ВОЗРАСТА //Наука и Мир. – 2017. – Т. 1. – №. 5. – С. 82-84.
22. Бабажанов А. С. и др. Совершенствование методов герниоабдоминопластики при симультанных хирургических заболеваниях //SCIENCE AND WORLD. – 2013. – С. 65.
23. Бабажанов А. С. и др. Сравнение эффективности эндовенозной лазерной коагуляции и традиционной комбинированной флебэктомии //Наука и мир. – 2017. – Т. 1. – №. 5. – С. 85-87.

24. Багненко С. Ф. и др. Медицинская помощь при механической травме груди и живота на догоспитальном этапе //Вестник хирургии имени ИИ Грекова. – 2007. – Т. 166. – №. 2. – С. 47-50.
25. Гадаев А. Г. Особенности течения ишемической болезнь сердца в сочетании с патологией гастродуоденальной зоны Машхура Абдуламахмудовна Сайфиддинова //Заместитель председателя оргкомитета. – 2016. – С. 381.
26. ГУЛАМОВ О. М. и др. ДИАФРАГМА ҚИЗИЛЎНГАЧ ТЕШИГИ ЧУРРАЛАРИНИ ТАШХИСЛАШ ВА ХИРУРГИК ДАВОСИНИНГ ХУСУСИЯТЛАРИ //ЖУРНАЛ БИОМЕДИЦИНЫ И ПРАКТИКИ. – 2022. – Т. 7. – №. 2.
27. Гуламов О. М. и др. Хирургическая тактика при грыжах пищеводного отверстия диафрагмы //НАУКА И ИННОВАЦИИ В XXI ВЕКЕ: АКТУАЛЬНЫЕ ВОПРОСЫ, ОТКРЫТИЯ И ДОСТИЖЕНИЯ. – 2019. – С. 195-197.
28. Давлатов С. С., Жураева Ф. Ф., Юсупалиева К. Б. К. Эффективность миниинвазивных методов хирургического лечения больных с острым деструктивным холециститом //Academy. – 2017. – №. 7 (22). – С. 92-94.
29. Даминов Ф. А. и др. Хирургическая тактика лечения диффузно-токсического зоба //Академический журнал Западной Сибири. – 2013. – Т. 9. – №. 1. – С. 21-21.
30. Кныш В. И. и др. Паллиативные резекции и экстирпации при раке ободочной и прямой кишки //Хирургия. – 1987. – №. 9. – С. 97.
31. Кныш В. И. и др. Синдром Ормонда в онкологической клинике //Хирургия. – 1989. – Т. 5. – С. 125-127.
32. Курбаниязов З. Б. и др. Эффективность использования миниинвазивных методов хирургического лечения больных с острым деструктивным холециститом //Академический журнал Западной Сибири. – 2013. – Т. 9. – №. 4. – С. 56-57.
33. Мирзаев Р. З., Ташкенбаева Э. Н., Абдиева Г. А. ПРОГНОСТИЧЕСКИЕ КЛИНИЧЕСКИЕ МАРКЕРЫ ПОЧЕЧНОЙ НЕДОСТАТОЧНОСТИ ПРИ

МЕТАБОЛИЧЕСКОМ СИНДРОМЕ //Журнал кардиореспираторных исследований. – 2022. – №. SI-2.

34. Мухиддинов А. И. и др. ОСОБЕННОСТИ ЦИРРОЗА ПЕЧЕНИ НА ФОНЕ САХАРНОГО ДИАБЕТА //Молодежь и медицинская наука в XXI веке. – 2014. – С. 227-228.
35. Ташкенбаева Э. и др. Маркеры гиперурикемии как фактор риска и предикторы сердечно-сосудистых заболеваний //Журнал проблемы биологии и медицины. – 2016. – №. 2 (87). – С. 191-194.
36. Ташкенбаева Э. Н. и др. Предикторы развития сердечно-сосудистых осложнений у больных с острым инфарктом миокарда с подъемом сегмента ST //Наука и общество в эпоху перемен. – 2018. – №. 1. – С. 12-15.
37. Ташкенбаева Э., Мирзаев Р., Арипов С. Современное состояние проблемы прогнозирования развития и течения ранней постинфарктной стенокардии //Журнал проблемы биологии и медицины. – 2015. – №. 2 (83). – С. 183-185.
38. Ташкенбаева Э., Насырова З., Мирзаев Р. Стратификация хронической ишемической болезни сердца в зависимости от методов диагностики и пути их лечения //Журнал кардиореспираторных исследований. – 2020. – Т. 1. – №. 3. – С. 28-32.
39. Тоиров А. и др. Особенности облитерации венозной стенки при эндовазальной лазерной коагуляции варикозно расширенных вен нижних конечностей //Журнал проблемы биологии и медицины. – 2014. – №. 2 (78). – С. 52-54.
40. Тоиров А. С. и др. Причины возникновения рецидива варикозной болезни //SCIENCE AND WORLD. – 2013. – С. 88
41. Тухтаев Ж. К. и др. Сравнительная оценка лечения варикозной болезни нижних конечностей //ДОСТИЖЕНИЯ ВУЗОВСКОЙ НАУКИ 2019. – 2019. – С. 158-161
42. Тухтаев Ж. К. СРАВНИТЕЛЬНАЯ ОЦЕНКА ОПЕРАЦИИ У ПАЦИЕНТОВ С ВАРИКОЗНОЙ БОЛЕЗНЬЮ НИЖНИХ КОНЕЧНОСТЕЙ //Молодежь и медицинская наука в XXI веке. – 2014. – С. 597-598.

43. Хасанжанова Ф. О. и др. ЗНАЧИМОСТЬ ГИПЕРУРИКЕМИИ И КОРРИГИРУЮЩАЯ ТЕРАПИЯ АЛЛОПУРИНОЛОМ И ТИВОРТИНОМ В КОМПЛЕКСНОЙ ТЕРАПИИ У БОЛЬНЫХ СТАБИЛЬНОЙ СТЕНОКАРДИЕЙ //Молодежь и медицинская наука в XXI веке. – 2014. – С. 263-265.
44. Хасанжанова Ф. О. и др. Изменение маркеров некроза кардиомиоцитов у больных с инфарктом миокарда в зависимости от возраста //Материалы IV Съезда ассоциации врачей экстренной медицинский помощи Узбекистана. Ташкент. – 2018. – С. 13-14.
45. Хасанжанова Ф. О. и др. Изменение маркеров некроза кардиомиоцитов у больных с инфарктом миокарда в зависимости от возраста //Материалы IV Съезда ассоциации врачей экстренной медицинский помощи Узбекистана. Ташкент. – 2018. – С. 13-14.
46. Хасанжанова Ф. О. и др. ФАКТОРЫ ВЛИЯЮЩИЕ НА ДИЛАТАЦИЮ ЛЕВОГО ЖЕЛУДОЧКА У БОЛЬНЫХ С НЕСТАБИЛЬНОЙ СТЕНОКАРДИЕЙ НАПРЯЖЕНИЯ //Молодежь и медицинская наука в XXI веке. – 2018. – С. 175-176.
47. Элмурадова А. А., Косимова Д. С., Шадыева Н. Ш. Вклад Абу али ибн Сино в развитие фитотерапии //Новый день в медицине. – 2020. – №. 4. – С. 604-606.
48. Элмурадова А. А., Косимова Д. С., Шадыева Н. Ш. Вклад Абу али ибн Сино в развитие фитотерапии //Новый день в медицине. – 2020. – №. 4. – С. 604-606.
49. Элмуродов А. Н. Двухфазная задача со свободной границей для квазилинейных параболических уравнений //ББК 22.251 я431+ 95.4 М341. – 2019. – С. 106.
50. Элмуродов А. Н. Двухфазная задача со свободной границей для систем параболических уравнений с нелинейным членом конвекции //Вестник КРАУНЦ. Физико-математические науки. – 2021. – Т. 36. – №. 3. – С. 110-122.

51. Элмуродов А. Н. ДВУХФАЗНАЯ ЗАДАЧА СТЕФАНА ДЛЯ КВАЗИЛИНЕЙНЫХ ПАРАБОЛИЧЕСКИХ УРАВНЕНИЙ //Актуальные проблемы науки и образования в современном ВУЗе. – 2019. – С. 189-193.
52. Элмуродов А. Н. Об одной задаче со свободной границей дляпараболического уравнения типа реакция-диффузия //Актуальные проблемы прикладной математики. – 2018. – С. 290-290.
53. Элмуродов А. Н. Трехфазная задача со свободной границей для уравнений типа реакция-диффузия //Дифференциальные уравнения и математическое моделирование. – 2019. – С. 67-67.
54. Эльмурадов Л. Паллиативные резекции и экстирпации при раке ободочной и прямой кишки: дисс.… канд. мед. наук //Дисс... канд. мед. наук. – 1988.
55. Эшонходжаев О. и др. МЕТОДЫ ПРОФИЛАКТИКИ СПАЕЧНОГО ПРОЦЕССА В АБДОМИНАЛЬНОЙ И ТОРАКАЛЬНОЙ ХИРУРГИИ //Журнал вестник врача. – 2021. – Т. 1. – №. 2 (99). – С. 178-185.
56. Юсупов А. М. и др. Комбинированный метод хирургического лечения варикозной болезни нижних конечностей //Молодежь и медицинская наука в XXI веке. – 2017. – С. 391-392.
57. Авазов А. А., Хурсанов Ё. Э. ОПТИМИЗАЦИЯ ЛЕЧЕБНО-ДИАГНОСТИЧЕСКИХ МЕТОДОВ НЕКРОЭКТОМИИ У БОЛЬНЫХ С РАННИМИ ОЖОГАМИ //Journal the Coryphaeus of Science. – 2023. – Т. 5. – №. 2. – С. 19-22.
58. Alisherovich U. K. et al. EVALUATION OF THE EFFECTIVENESS OF MULTI-STAGE SURGICAL TACTICS IN SEVERE LIVER DAMAGE //Research Focus. – 2023. – Т. 2. – №. 1. – С. 312-318.
59. Alisherovich U. K., Rashidovich S. H., Ugli K. Y. E. OUR EXPERIENCE IN CONSERVATIVE TREATMENT OF SPLEEN INJURY IN CLOSED ABDOMINAL TRAUMA //Research Focus. – 2023. – Т. 2. – №. 1. – С. 319-325.
60. Хурсанов Ё. Э. У., Жуманов Х. А. У., Эргашев А. Ф. СОВЕРШЕНСТВОВАНИЕ МЕТОДОВ ЛЕЧЕНИЯ БОЛЬНЫХ С

ТЯЖЕЛЫМИ ОЖОГАМИ //Research Focus. – 2023. – Т. 2. – №. 1. – С. 332-340.

61. Temirovich A. M. et al. CRF AND CKD: MODERN APPROACHES TO TERMINOLOGY, CLASSIFICATION, DIAGNOSIS AND TREATMENT //Research Focus. – 2023. – Т. 2. – №. 1. – С. 79-90.
62. Akhmedov R. F. et al. Our experience in the treatment of burn sepsis //Actual problems of thermal trauma. Emergency Surgery.-Saint-Petersburg. – 2021. – С. 10-11.
63. Толибов М. М. и др. ОПТИМИЗАЦИЯ К ЛЕЧЕНИЮ ТЯЖЕЛЫХ ОБОЖЖЕННЫХ БОЛЬНЫХ //SCIENTIFIC APPROACH TO THE MODERN EDUCATION SYSTEM. – 2023. – Т. 2. – №. 14. – С. 190-199.
64. Нормаматов Б. П., Сатторов А. Х. К., Хурсанов Ё. Э. К. СОВРЕМЕННЫЕ И НОВЫЕ МЕТОДЫ ДИАГНОСТИКИ И ЛЕЧЕНИЯ ХРОНИЧЕСКОГО И ОСТРОГО ПАНКРЕАТИТА //MODELS AND METHODS FOR INCREASING THE EFFICIENCY OF INNOVATIVE RESEARCH. – 2023. – Т. 2. – №. 21. – С. 103-113.
65. Нормаматов Б. П. К., Сатторов А. Х. К., Хурсанов Ё. Э. К. ОПТИМИЗАЦИЯ ХИРУРГИЧЕСКОЙ ТАКТИКИ ПРИ ОТКРЫТЫХ И ЗАКРЫТЫХ ТРАВМАХ БРЮШНОЙ ПОЛОСТИ //MODELS AND METHODS FOR INCREASING THE EFFICIENCY OF INNOVATIVE RESEARCH. – 2023. – Т. 2. – №. 21. – С. 114-121.