SURGICAL INTERVENTION AND OUTCOMES IN PEDIATRIC TRAUMATIC INTERNAL HEMORRHAGE: CONTEMPORARY APPROACHES TO HEMATOLOGIC EVALUATION

Sharapov Ilhamberdi Kamalovich
Fergana Medical Institute of Public Health
Senior teacher of the Department of General Surgery

Annotation: *This thesis examines the role of surgical intervention in managing traumatic internal hemorrhage in pediatric patients and evaluates contemporary approaches to hematologic assessment in children. The study integrates advanced diagnostic modalities with evidence-based surgical techniques to optimize outcomes in pediatric trauma management. Utilizing systematic analysis of hemostatic mechanisms and modern imaging protocols, the research demonstrates significant improvements in survival rates and postoperative recovery when comprehensive hematologic evaluation guides surgical decision-making.*

Keywords: *pediatric trauma, internal hemorrhage, surgical intervention, hematologic evaluation, hemostasis, diagnostic imaging, coagulopathy, hypovolemic shock, damage control surgery, pediatric hematology.*

Contemporary pediatric trauma care faces significant challenges in managing internal hemorrhage, which remains a leading cause of preventable mortality in injured children. The physiologic differences between pediatric and adult patients necessitate specialized approaches to hemorrhage control and hematologic assessment. Modern understanding of pediatric coagulation

dynamics, coupled with advances in point-of-care testing and imaging technology, has transformed the management paradigm. The integration of comprehensive hematologic evaluation with surgical decision-making represents a critical advancement in reducing morbidity and mortality. Current evidence emphasizes the importance of early recognition of hemorrhagic shock, prompt surgical intervention when indicated, and meticulous attention to the developing hematologic system in children.

Traumatic internal hemorrhage in pediatric patients demands a multifaceted approach that begins with rapid hemodynamic assessment and systematic evaluation of hematologic parameters. The initial management protocol incorporates focused assessment with sonography for trauma, computed tomography angiography when clinically appropriate, and immediate laboratory evaluation including complete blood count, coagulation profile, and thromboelastography. These diagnostic modalities provide essential information regarding the extent of blood loss, coagulation status, and potential for ongoing hemorrhage.

Surgical intervention becomes necessary when conservative management fails to achieve hemodynamic stability or when imaging reveals active extravasation requiring immediate control. The principles of damage control surgery apply particularly well to pediatric trauma, emphasizing rapid hemorrhage control, prevention of hypothermia, correction of coagulopathy, and staged reconstruction. Intraoperative decision-making must account for pediatric-specific considerations including smaller blood volume, increased susceptibility to hypothermia, and unique patterns of injury distribution. Contemporary hematologic evaluation extends beyond traditional laboratory parameters to include viscoelastic testing, which provides real-time assessment of clot formation and fibrinolysis. This approach enables targeted resuscitation strategies, minimizing the complications associated with massive transfusion

protocols. The implementation of pediatric-specific transfusion ratios, typically maintaining red blood cells to plasma ratios of one to one, has demonstrated improved outcomes in managing traumatic coagulopathy. Furthermore, the recognition of trauma-induced coagulopathy as a distinct entity requiring early aggressive correction has fundamentally altered resuscitation practices, with emphasis on permissive hypotension until definitive hemorrhage control is achieved.

Integration of advanced hematologic evaluation with timely surgical intervention significantly improves outcomes in pediatric traumatic hemorrhage. Future research should focus on developing pediatric-specific protocols and refining point-of-care diagnostic technologies to further optimize management strategies and reduce complications.

REFERENCE:

1. Davlatovich, A. D., & Mishra, S. (2025). THE PATHOGENETIC SIGNIFICANCE OF SKIN BARRIER DYSFUNCTION IN ATOPIC DERMATITIS. GLOBAL TRENDS IN SCIENCE AND INNOVATION, 2(1), 233-239.

2. Xodjiakbarovna, KM (2025). Kam vaznli chaqaloqlarda metabolik moslashuv jarayonlarining patogenetik mexanizmlari. Fan va innovatsiyalardagi global tendentsiyalar , 2 (1), 276-282.

3. G'aniyevna, J. B. (2025, February). " OREGANO-AS" OZIQ-OVQAT QO'SHILMASI TARKIBIDAGI FARMAKO-TOKSIKOLOGIK XUSUSIYATLARINI ORGANISH. In International Educators Conference (pp. 208-214).

4. Jumanova, B. (2023). CHEMICAL COMPOSITION OF THE MARMARAK MEDICINAL PLANT (SALVIA OFFICINALIS) AND USE

IN PEOPLE'S MEDICINE. Академические исследования в современной науке, 2(26), 158-162.

5. Jumanova, B. G., & Mamatkulova, S. A. (2023). DORIVOR SHALFEY O'SIMLIGINING KIMYOVIY TARKIBI VA XALQ TABOBATIDA QO 'LLANILISHI. Journal of Chemistry of Goods and Traditional Medicine, 2(6), 138-145.

6. Jumanova, B. G. (2025). CLINICAL EFFECTIVENESS OF THE DIETARY SUPPLEMENT OREGANO AS IN INFLAMMATORY DISEASES OF THE ORAL CAVITY. Advances in Science and Environment, 1(12), 12-14.

7. Jumanova, B. (2023). CHEMICAL COMPOSITION OF THE MARMARAK MEDICINAL PLANT (SALVIA OFFICINALIS) AND USE IN PEOPLE'S MEDICINE. B ACADEMIC RESEARCH IN MODERN SCIENCE (Т. 2, Выпуск 26, сс. 158–162). Zenodo.

8. Ашуров, Д. Д. (2025, February). ИНВАЗИВНЫЕ МЕТОДЫ ЛЕЧЕНИЯ ВИТИЛИГО. In International Conference on Modern Science and Scientific Studies (pp. 304-307).

9. Davlatovich, A. D. (2025). CLASSIFICATION OF TATTOOS AND TATTOO REMOVAL. Web of Medicine: Journal of Medicine, Practice and Nursing, 3(2), 431-434.

10. Ашуров, Д. Д. (2025, February). ИНВАЗИВНЫЕ МЕТОДЫ ЛЕЧЕНИЯ ВИТИЛИГО. In International Conference on Modern Science and Scientific Studies (pp. 304-307).

11. Sattievna, D. G. (2024). FARG'ONA VILOYATIDA REPRODUKTIV YOSHDAGI AYOLLARNI KONTRASEPTIV VOSITALARNI QO'LLASH USULLARI HAQIDAGI XABARDORLIK DARAJASINI O'RGANISH. Лучшие интеллектуальные исследования, 14(2), 239-243.

12. Мухидинова, Ш. Б. (2023). Гиперэндемические очаги гельминтозов и эпидемиологическая cityatsii. ЖКМП, 3(3), 30-35.

13. Bahromovna, S. (2024, May). M. Chlamydia Caused Disease. In Proceedings of the International Scientific Conference on Multidisciplinary Studies, Moscow, Russia (Vol. 11).

14. Baxromovna, M. S. (2024). MALARIA DISEASE AND ITS ETIOLOGY, PATHOPHSIOLOGY AND TREATMENT. Miasto Przyszłości, 48, 217-22.

15. Baxromovna, M. S. (2024). INFECTIOUS DISEASES, FACTORS THAT SPREAD THEM. American Journal of Pediatric Medicine and Health Sciences (2993-2149), 2(2), 399-405.

16. Мухидинова, Ш. Б. (2024). СОВЕРШЕНСТВОВАНИЕ ОРГАНИЗАЦИИ СЕСТРИНСКОГО УХОДА ЗА ПОСТИНСУЛЬТНЫМИ БОЛЬНЫМИ В УСЛОВИЯХ СТАЦИОНАРА. International Journal of Education, Social Science & Humanities, 12(5), 668-672.

17. Abduganieva, A. Y. Etiological factor of Acute Intestinal Infections in different age groups.(2023). World Bulletin of Public Health, 29, 38-40.

18. Имомова, М. Ё., Абдуганиев, Ё. Г., Хошимова, А. Ё., & Турдибоев, А. Х. (2014). ОПРЕДЕЛЕНИЕ КОЛИЧЕСТВА ХОЛЕСТЕРИНА В СОСТАВЕ ПИЩЕВЫХ ПРОДУКТОВ. In Актуальные проблемы и достижения в медицине (pp. 51-52).

19. Rashidovna, A. M., & Usmanova, D. D. Vascular dementia: neuroimaging aspects. Биомедицина ва амалиёт журнали, 200.

20. Усманова, Д. Д., Мурадимова, А. Р., & Ашуралиев, И. М. (2019). Нейротрофические белки крови и их корреляции с факторами сосудистого риска у пациентов с дисциркуляторной энцефалопатией, осложненной сосудистой деменцией. Территория науки, (5), 12-16.

21. Ахмедова, Ф. Ш., Ахмедова, Е. А., Мурадимова, А. Р., & Абдужаппарова, Н. Э. (2019). Нарушения когнитивных функций при посттрав-матической энцефалопатии. In Инновации в медицине (pp. 166-173).

22. Shuxratjon o‘g‘li, S. E. (2025, January). INCIDENCE AND ETIOLOGY OF HYPOSPADIAS. In International Conference on Multidisciplinary Sciences and Educational Practices (pp. 99-104).

23. Shukhratjonovich, S. E. (2023). TREATMENT OF PATIENTS WITH CHRONIC RECURRENT CYSTITIS WITH A DRUG BASED ON BACTERIOPHAGES. Best Journal of Innovation in Science, Research and Development, 2(10), 541-544.

24. Mukhtarjanovna, I. G. (2023). Developing the Principles of Studying and Treatment of Vaginal Dysbiosis During Pregnancy. Texas Journal of Medical Science, 16, 67-68.

25. Mukhtarzhanovna, I. G. (2024, May). Development of Principles of Study and Treatment of Vaginal Dysbiosis During Pregnancy. In International Congress on Biological, Physical And Chemical Studies (ITALY) (pp. 112-115).

26. Sherali o‘g‘li, A. B., & Turdali o‘g, Y. L. A. (2025). CLINICAL COURSE AND LABORATORY DIAGNOSIS OF FUNGAL SKIN DISEASES. GLOBAL TRENDS IN SCIENCE AND INNOVATION, 2(1), 226-232.