New Day in Medicine
Новый День в Медицине
NDM

TIBBIYOTDA YANGI KUN

Ilmiy referativ, marifiy-ma'naviy jurnal









AVICENNA-MED.UZ

ISSN 2181-712X.
EiSSN 2181-2187

9 (95) 2026

Сопредседатели редакционной коллегии:

Ш. Ж. ТЕШАЕВ,
А. Ш. РЕВИШВИЛИ

Ред. коллегия:
М.И. АБДУЛЛАЕВ
А.А. АБДУМАЖИДОВ
Р.Б. АБДУЛЛАЕВ
Л.М. АБДУЛЛАЕВА
А.Ш. АБДУМАЖИДОВ
М.А. АБДУЛЛАЕВА
Х.А. АБДУМАДЖИДОВ
Б.З. АБДУСАМАТОВ
У.О. АБИДОВ
М.М. АКБАРОВ
Х.А. АКИЛОВ
М.М. АЛИЕВ
С.Ж. АМИНОВ
Ш.Э. АМОНОВ
Ш.М. АХМЕДОВ
Ю.М. АХМЕДОВ
С.М. АХМЕДОВА
Т.А. АСКАРОВ
М.А. АРТИКОВА
Д.Т. АШУРОВА
Ж.Б. БЕКНАЗАРОВ (главный редактор)
Е.А. БЕРДИЕВ
Б.Т. БУЗРУКОВ
Р.К. ДАДАБАЕВА
М.Н. ДАМИНОВА
К.А. ДЕХКОНОВ
Э.С. ДЖУМАБАЕВ
А.А. ДЖАЛИЛОВ
Н.Н. ЗОЛОТОВА
А.Ш. ИНОЯТОВ
С. ИНДАМИНОВ
А.И. ИСКАНДАРОВ
А.С. ИЛЬЯСОВ
Э.Э. КОБИЛОВ
А.М. МАННАНОВ
Д.М. МУСАЕВА
Т.С. МУСАЕВ
М.Р. МИРЗОЕВА
Ф.Г. НАЗИРОВ
Н.А. НУРАЛИЕВА
Ф.С. ОРИПОВ
Б.Т. РАХИМОВ
Х.А. РАСУЛОВ
Ш.И. РУЗИЕВ
С.А. РУЗИБОЕВ
С.А.ГАФФОРОВ
С.Т. ШАТМАНОВ (Кыргызстан)
Ж.Б. САТТАРОВ
Б.Б. САФОЕВ (отв. редактор)
И.А. САТИВАЛДИЕВА
Ш.Т. САЛИМОВ
Д.И. ТУКСАНОВА
М.М. ТАДЖИЕВ
А.Ж. ХАМРАЕВ
Б.Б. ХАСАНОВ
Д.А. ХАСАНОВА
Б.З. ХАМДАМОВ
Э.Б. ХАККУЛОВ
Г.С. ХОДЖИЕВА
Г.У. НУРОВА
А.М. ШАМСИЕВ
А.К. ШАДМАНОВ
Н.Ж. ЭРМАТОВ
Б.Б. ЕРГАШЕВ
Н.Ш. ЕРГАШЕВ
И.Р. ЮЛДАШЕВ
Д.Х. ЮЛДАШЕВА
А.С. ЮСУПОВ
Ш.Ш. ЯРИКУЛОВ
М.Ш. ХАКИМОВ
Д.О. ИВАНОВ (Россия)
К.А. ЕГЕЗАРЯН (Россия)
DONG JINCHENG (Китай)
КУЗАКОВ В.Е. (Россия)
Я. МЕЙЕРНИК (Словакия)
В.А. МИТИШ (Россия)
В И. ПРИМАКОВ (Беларусь)
О.В. ПЕШИКОВ (Россия)
А.А. ПОТАПОВ (Россия)
А.А. ТЕПЛОВ (Россия)
Т.Ш. ШАРМАНОВ (Казахстан)
А.А. ЩЕГОЛОВ (Россия)
С.Н ГУСЕЙНОВА (Азарбайджан)
Prof. Dr. KURBANHAN MUSLUMOV(Azerbaijan)
Prof. Dr. DENIZ UYAK (Germany)

ТИББИЁТДА ЯНГИ КУН
НОВЫЙ ДЕНЬ В МЕДИЦИНЕ
NEW DAY IN MEDICINE

Илмий-рефератив, маънавий-маърифий журнал
Научно-реферативный,
духовно-просветительский журнал

УЧРЕДИТЕЛИ:

БУХАРСКИЙ ГОСУДАРСТВЕННЫЙ МЕДИЦИНСКИЙ ИНСТИТУТ
ООО «ТИББИЁТДА ЯНГИ КУН»

Национальный медицинский исследовательский центр хирургии имени А.В. Вишневского является генеральным научно-практическим консультантом редакции

Журнал был включен в список журнальных изданий, рецензируемых Высшей Аттестационной Комиссией Республики Узбекистан (Протокол № 201/03 от 30.12.2013 г.)

РЕДАКЦИОННЫЙ СОВЕТ:

М.М. АБДУРАХМАНОВ (Бухара)
Г.Ж. ЖАРЫЛКАСЫНОВА (Бухара)
А.Ш. ИНОЯТОВ (Ташкент)
Г.А. ИХТИЁРОВА (Бухара)
Ш.И. КАРИМОВ (Ташкент)
У.К. КАЮМОВ (Тошкент)
Ш.И. НАВРУЗОВА (Бухара)
А.А. НОСИРОВ (Ташкент)
А.Р. ОБЛОКУЛОВ (Бухара)
Б.Т. ОДИЛОВА (Ташкент)
Ш.Т. УРАКОВ (Бухара)

9 (95)

2026

Сентябрь

www.bsmi.uz
https://newdaymedicine.com
E: ndmuz@mail.ru
Тел: +99890 8061882

Received: 20.08.2026, Accepted: 10.09.2026, Published: 15.09.2026

УДК 616.61-008.64-053.2-08:615.38: 616.12-008.33

HEMODYNAMIC CRITERIA FOR COMBINED EXTRACORPOREAL DETOXIFICATION IN CHILDREN WITH RENAL FAILURE

Sharipov I.L. https://orcid.org/0000-0002-3090-4030
Akramov B. R. https://orcid.org/0000-0003-0103-7166

Samarkand State Medical University Uzbekistan, Samarkand, st. Amir Temur 18,
Tel: +99818 66 2330841 E-mail: sammu@sammu.uz

✓ ***Resume***

The effectiveness of detoxification methods was studied in 63 patients with acute renal failure (ARF). The use of combined extracorporeal detoxification (ECD) methods in children with renal failure poses a significant stress on the cardiovascular system. Accurate assessment and determination of hemodynamic criteria during therapy are crucial to reducing the risk of procedural complications.

Key words: Pediatric renal failure, combined extracorporeal detoxification, hemodynamic criteria, hemodynamic gradations, continuous renal replacement therapy (CRRT), pediatric intensive care.

ГЕМОДИНАМИЧЕСКИЕ КРИТЕРИИ КОМПЛЕКСНОЙ ЭКСТРАКОРПОРАЛЬНОЙ ДЕТОКСИКАЦИИ ПРИ ПОЧЕЧНОЙ НЕДОСТАТОЧНОСТИ У ДЕТЕЙ

Шарипов И.Л., Акрамов Б.К.

Самаркандский государственный медицинский университет Узбекистан, г.Самарканд,
ул. Амира Темура 18, Тел: +99818 66 2330841 E-mail: sammu@sammu.uz

✓ ***Резюме***

Исследование эффективности методов детоксикации проведено у 63 больных с острой почечной недостаточностью (ОПН). Применение методов комплексной экстракорпоральной детоксикации (ЭКД) у детей с почечной недостаточностью сопряжено с высокой нагрузкой на сердечно-сосудистую систему. Точная оценка и определение гемодинамических критериев в процессе терапии имеют решающее значение для снижения риска осложнений.

Ключевые слова: Почечная недостаточность у детей, комплексная экстракорпоральная детоксикация, гемодинамические критерии, градации гемодинамики, комбинированные методы очищения крови, интенсивная терапия.

BOLALAR BUYRAK YETISHMOVCHILIGIDA MAJMUAVIY EKSTRAKORPORAL DETOKSIKATSIYANING GEMODINAMIK MEZONLARI

Sharipov I.L., Akramov B. R.

Samarqand davlat tibbiyot universiteti O‘zbekiston, Samarqand, st. Amir Temur 18,
Tel: +99818 66 2330841 E-mail: sammu@sammu.uz

✓ ***Rezyume***

O‘tkir buyrak yetishmovchiligi (O‘BYE) bo‘lgan 63 bemorda detoksifikatsiya usullarining samaradorligini tekshirish o‘tkazildi. Buyrak yetishmovchiligi bo‘lgan bolalarda majmuaviy ekstrakorporal detoksikatsiya (EKD) usullarini qo‘llash qon aylanishi tizimiga yuqori yuklama tug‘diradi. Davolash jarayonida gemodinamik ko‘rsatkichlarni to‘g‘ri baholash va ularning mezonlarini aniqlash asoratlar xavfini kamaytirishda muhim ahamiyatga ega.

Kalit so‘zlar: Bolalar buyrak yetishmovchiligi, majmuaviy ekstrakorporal detoksikatsiya, gemodinamik mezonlar, gemodinamika gradatsiyalari (darajalari), qonni tozalashning kombinatsiyalashgan usullari, intensiv terapiya.

Relevance

Despite of improvement of the treatment methods of acute renal failure (ARF), the received results remain largely debated and require optimal solution. Scanty of information regarding use of extracorporeal detoxification methods (ECD) in children with ARF is the leading position in order to study pathology in general and it has a priority level to reduce mortality. The system of regulatory mechanisms of human body in response to the changes of the renal functions is accompanied by the whole cascade of changes in metabolic processes that lead to the hemodynamic and microcirculation disorders, disruption of detoxification properties and disorder in electrolyte metabolism. The leading space among pathological links of renal failure (RF) is the changes in detoxification and hemodynamic that formed under the influence of the toxic agent (urea, creatinin) which is largely determined duration character and the outcome of the disease. Until present time it has not been solved a question regarding the effective use of the different methods of ECD depending on the forms and stages of RF. Methodology of individual indications for the complex use of these methods in children is still remains some problems.

The aim of the investigation was to study the influence of the combined use of hemodialysis (HD), hemosorption (HS) and metabolic plasmapheresis (PP) for the hemodynamic and effective reduce of intoxication in children with ARF.

Materials and methods

Investigations were performed in 63 children (at the age from 2 to 14 years old) with ARF that was developed as a result of prerenal (hypovolemia, septic shock) and renal (acute glomerulonephritis, pyelonephritis) factors. Depending on the devised detoxification methods, patients were divided into control group (5) whom it was performed only HD-method and control group (58) with use of methods of gravitational surgery, such as HS, HD and PP. Introduction of these ECD-methods have been caused by the severity of intoxication syndrome, which develops multi-organ failure (MOF). As a consequence of it, the main group patients were divided into three subgroups, depending on the severity of general condition and the ECD-method used: 1 – a subgroup of (7) – with the use of HD and HS-methods; 2 – subgroup (25) – with the use of HD and PP-methods; 3 – subgroup (27) – with the use of HD, HS and PP-methods.

We have studied parameters of central hemodynamic on Aloca apparatus (made in Japan) with determining diastolic (DBP), systolic (SBP) blood pressures, heart rate (HR); levels of urea (Ur) and creatinin (Cr) in the blood and in the urine by use of ureas method with reagents of La-Chema firm (made in Czech Republic); levels of potassium and sodium were determined on "Microlit" apparatus (made in Hungary) with using of reagents of La-Chema firm (made in Czech Republic); according to the levels of blood and urine creatine (Reberg's test) it was calculated the changes of glomerular filtration rate (GFR) and tubular reabsorbtion (TR); ultrasound investigation (USI) of kidneys was performed by use of "Acuson-128 XP/10" apparatus (made in USA), with 3.5 MHz transducer; echocardiographic method of investigation (EchoCR) was performed as a standard on «EУ – 405» apparatus of Hitachi firm (made in Japan) with the use of convex sensor with the frequency of 3,5 MHz; central venous pressure (CVP) was performed by the use of Valdman method.

Results and discussions

General clinical presentation in all patient's during admission was noted by the significance of intoxication syndrome, signs of respiratory, cardiovascular insufficiencies, in 84,2% of cases it was noted by mental confusion, in 72% of cases it was noted by anemic syndrome, in 78% of cases it was noted by hypoproteinemia and in 93% of cases it was noted by anuria. In 63 cases methods of complex treatment of children were performed once depending on the severity of condition, significant degree of the intoxication syndrome and the level of changes in internal organs.

In the age and sex aspects patients were characterized by a relative identity and comparability of basic anthropometric parameters. Performed methods of conservative treatment were directed for the correction of hemodynamic, electrolyte, biochemical parameters, regulation of the respiratory and cardiovascular systems. Indications for performing methods of extracorporeal detoxification depended on the urgency of the condition in ARF, intensity of the organs changes and manifestations of uremia in children. Besides that, indubitable role in the selection of ECD-methods had the intensity of the changes

in biochemical parameters, shift of which were corresponded to the level of basic pathology and associated complications.The basic cause of the development of ARF in children was the generalization of infection in bronchopulmonary diseases with the development of acute pyelonephritis (22,2%) and acute glomerulonephritis (63,49%). Late treatment, latent of clinical manifestation, the absence of the frank signs of renal injures, iatrogenic situations where the reasons for the development of ARF.

The performed investigations have been determined the changes of the basic parameters of central hemodynamic in children with ARF (table 1) until ECD accompanied by the decreased results of heart rate in 8,2% in the first subgroup of the basic group, in 0,37% in the second subgroup and in 0,92% in the third subgroup relatively to the analogical value in the control group. At the same time, the average index of SBP in the first subgroup was decreased in 0,27%, in 1,46% in the second subgroup and in 14,94% in the third subgroup relatively to the analogical value in the control group. The level of DBP in the first subgroup was the same as in control group, in the second subgroup this level was decreased in 2,7% and in the third subgroup this level was decreased in 16,1% relatively to the analogical value in the control group.

Specification of the changes in CVB on admission in patients with ARF has been established that in the first subgroup of patients with ARF this index was insignificantly high (in 0,9%), in the second subgroup of patients this index was decreased in 1,8% and in the third subgroup of patients this index was decreased in 0,45%, relatively to the analogical value in the control group.So, we can establish that the basic parameters of the central hemodynamic before performing ECD in patients of the main and control groups with ARF are comparable and almost equal. This circumstance could allow us to regulate the results and to establish the effectiveness of the ECD implementation in the following investigations.Considering the changes of the parameters (table 2) reflecting the level of intoxication syndrome before performing ECD we could note that exactly these changes were the confirmation of the severity of the patients' condition in the groups in the consequence of this it was carried out the distribution. On admission in patients with ARF of the first subgroup of the main group it was determined the increased level of urea in 5,6%, in the second subgroup it was determined the increased level of urea in 82,8% and in the third subgroup it was determined the increased level of urea in 93,3% relatively to the analogical value in the control group. In one's turn, the analogical tendency was determined during the investigation of blood creatinin level, when in the first subgroup of the main group it was noted its increasing in 3,63%, in the second subgroup it was noted its increasing in 9,34% and in the third subgroup it was noted its increasing in 13,8% from the results of the control group.

So, we could note that the indexes of the basic toxic metabolites in the control and main groups were initially increased and the range of values was predetermined the general patients' condition and the level of intoxication.Elucidating the changes associated with the regulation of water-electrolyte metabolism we could note that in patients with ARF before performing ECD the sodium level was decreased in the first subgroup of the main group in 8,3%, in the second subgroup the sodium level was decreased in 3,6% and in the third subgroup the sodium level was decreased in 10,2% relatively to the analogical value in the control group. At the same time, potassium level was increased in 44,6% in the first subgroup, in 86,6% in the second subgroup and in 131,1% in the third subgroup of patients relatively to the analogical value in the control group.So, it has been found that electrolyte metabolism in patients with ARF on admission was significantly disturbed and in a greater degree at the expense of the increasing potassium level which predetermined patients' condition.

There is no doubt that a change in metabolism could not affect to the renal function in patients with ARF which was reflected by the decreasing of KF-index in 6,4% in the first subgroup, in 22,3% in the second subgroup and in 38,6% in the third subgroup of patients relatively to the analogical value in the control group. Inseparably linked with the pointed index, the result of KR in patients of the first subgroup of the main group were characterized by the increased rate in 1,87%, in the second subgroup this rate was increased in 17,9% and in the third subgroup this rate was increased in 28,8% from the same rates in the control group. The received results are the evidence of the significant worsening of renal function in children with ARF more striking in the main group.

Considering the trench of the received results of the performed treatment of patients with ARF it was carried out the analyses the data depending on the initial data. It was obtained the significant changes (table 1) of HR in postsorptional period in patients of the control group which was noted by the decrease in 10,22%; in the first subgroup it was decreased in 3,02%, in the second subgroup it was decreased in

13,6% and in the third subgroup it was decreased in 9,7%. At the same time, it was determined the decreasing of this rate in 0,92% in the first subgroup, in 4,2% in the second subgroup and in 0,36% in the third subgroup of patients relatively to the analogical value in the control group. The effectiveness of SBP after performed treatment in patients with ARF have also been noted by the positive decreasing, when in the control group the decreasing was achieved in 9,2%, in the first subgroup it was achieved in 15,4%, in the second subgroup it was achieved in 14,5% and in the third subgroup of patients it was achieved in 6,30%. Regarding these results in the control group, in the first subgroup of the main group it was determined the decreasing of SBP in 7,07%, in the second subgroup this rate was decreased in 7,30% and in the third subgroup of patients this rate was decreased in 12,2%.

The relative stabilization of DBP in postsorptional period in children with ARF was determined by decreasing in 14,9% in the control group, in 20% in the first subgroup, in 16,23% in the second subgroup and in 10,8% in the third subgroup of patients relatively from the initial values. The analyses of the performed investigations has been showed the effectiveness of ECD when in the first subgroup the level of SBP was decreased in 5,9%, in the second subgroup this level was decreased in 4,2% and in the third group of patients this level was decreased in 12,1% relatively to the analogical value in the control group. Changes in CVP have also had a significant character which was noted by the decreasing value in the postsorptional period in patients with ARF. In the control group after performed therapy it was noted decreasing of CVP in 10,45%, in the first subgroup this value was decreased in 17,9%, in the second subgroup this value was decreased in 25,7% and in the third subgroup of patients this value was decreased in 34,5%. The analysis of the comparability of the results have been determined that in the first subgroup of patients of the main group the decreasing of CVP was in 7,6%, in the second subgroup it was in 18,5% and in the third subgroup of patients it was in 25,9% relatively to the analogical value in the control group.

So, we could establish that in postsorptional period it was achieved the positive results of hemodynamic disorders during the use of ECD in the most severe group of patients with ARF.

The analyses of ECD-efficacious (table 2) have been showed that in postsorptional period in patients with ARF it was significantly decreased intoxication syndrome caused by accumulation of the toxic products in the circulated blood. The level of urea in the control group of patients with ARF was decreased after performing ECD in 24,9%, in the first subgroup this level was decreased in 58,4%, in the second subgroup this level was decreased in 67,7% and in the third subgroup of patients this level was decreased in 58,8%. During the comparison of the ECD effectiveness in the investigated groups it was ascertained that the level of urea in the first subgroup of the main group patients with ARF was decreased in 41,5%, in the second subgroup this level was decreased in 21,4% and in the third subgroup of patients this level was decreased in 6,07%, relatively to the analogical level in the control group. There is no doubt, that at the same time with it in the blood we examined the decreasing level of creatinin which is a toxic metabolite. In patients with ARF in postsorptional period it was noted the decreasing level of this metabolite in 30,65% in the control group, in the first subgroup this level was decreased in 41,66%, in the second subgroup this level was decreased in 38,78% and in the third subgroup of patients this level was decreased in 39,02% relatively from the initial levels. At the same time it was performed the analyses of ECD-efficacious which was determined that in the first subgroup of patients with ARF the level of creatinin was decreased in 15,44%, in the second subgroup the level of creatinin was decreased in 4,81% and in the third subgroup of patients the level of creatinin was decreased in 3,37% relatively to the analogical level in the control group.

At the same time the investigation of the electrolyte metabolism was determined the decreasing level of sodium in postsorptional period in 7,41% in the control group, in the first subgroup of the main group of patients with ARF the level of sodium was decreased in 10,28%, in the second subgroup of children the level of sodium was decreased in 26,24% and in children in the third subgroup the level of sodium was decreased in 32,08% relatively to the initial levels. During the analyses of the effectiveness of ECD-methods it was determined that in the first subgroup the decreasing level of sodium was reached 4,22%, in the second subgroup the decreasing level of sodium was reached 7,69% and in the third subgroup the decreasing level of sodium was reached 32,08% relatively to the analogical level in the control group.The most important circumstance was the decreasing level of potassium after performing of ECD-methods in children with ARF. In the control group the decreasing of this electrolyte was 26,6%, in the first subgroup the decreasing of this electrolyte was 18,18%, in the second subgroup the decreasing of

this electrolyte was 69,4% and in the third subgroup of patients the decreasing of this electrolyte was 72,1% relatively to the initial results. But at the same time the decreasing level also was reached in the first subgroup in 18,18%, in the second subgroup in 21,21% and in the third subgroup of patients in 12,12% relatively to the control levels of this electrolyte.

Consequently, the combined application of the ECD-methods was determined by the effective elimination of intoxication syndrome with sufficiently elimination of the toxic metabolites from the blood circulation. Considering the influence of the ECD-methods to the restoration of the renal functional disorders we could note that in postsorptional period the level of KF was significantly restored. So, in the control group the level of KF was increased after performing of ECD in 40,57%, in the first subgroup this level was increased in 58,34%, in the second subgroup this level was increased in 73,6% and in the third subgroup of patients this level was increased in 87,13% from the initial levels. During the comparisons of the effectiveness of ECD it was noted that concerning to the findings in the control group in patients of the first subgroup of the main group with ARF the level of KF was decreased in 5,3%, in the second subgroup this level was decreased in 4,12% and in the third subgroup of patients this level was decreased in 18,32%.

The indexes of KR were distinctive in postsorptional period, when in the control group restoration level of such index was 103,7%, in the first subgroup the level of this index was 131,23%, in the second subgroup the level of this index was 88,2% and in the third subgroup the level of this index was 58,1% relatively to the initial findings. During the elucidation of the effectiveness of ECD-methods it was determined that in the first subgroup the increasing level of KR was 15,6%, in the second subgroup the increasing level of KR was 8,32% and in the third subgroup of patients the increasing level of KR was the same in the comparison of the values of analogous level in the control group.On the bases of the received results we could establish that the combined ECD-methods are effectively used only after performing séances of HD in patients with ARF.

Conclusion

The influence of the sorptional methods of detoxification in patients with ARF has a significant advantage before the séances of monohemodialyses. The corrected influence of the complex therapy is effect on the restoration of the organs' function, decreasing of the intoxication syndrome and improvement of the patients' clinical condition. There is no doubt that ECD-methods have a significant orientation and use of them is possible in children with uncorrected conditions only with the séances of hemodialyses. The devised methods have been showed significant positive changes in the metabolic level, decreasing of intoxication at the expense of removing of the residual products of metabolism, levels of potassium and other metabolites. Taking into consideration the influence of the each ECD-method for the human organism, realization of its possibilities it was paid attention for the effectiveness of these methods in the group of the most severe patients with ARF. So, the combined ECD-methods is the important part of the complex treatment of patients with ARF and could be recommended for the treatment of such category of patients.

LIST OF REFERENCES:

1. Akramov BR, Sharipov IL. Optimization of anesthesia during plastic Pediatric Surgery. 2020;24(S1).
2. Brophy PD. Renal supportive therapy for pediatric acute kidney injury in the setting of multiorgan dysfunction syndrome/sepsis. Semin Nephrol. 2018;28(5):457-469.
3. Borrego Utiel FJ, Segura Torres P, Barrio MP. How do disorders related to hospitalisation influence haemodialysis patients' nutrition? Nefrologia. 2016;31(4):471-483.
4. Joniev SSh, Rakhimov AU, Babazhanov AS. The value of biochemical parameters during preoperative preparation of patients with nodular goiter. Science and World. 2013;(10):136.
5. Kimmel PL, Patel SS. Quality of life in patients with chronic kidney disease: focus on end-stage renal disease treated with hemodialysis. Semin Nephrol. 2016;26(1):68-79.
6. Matlubov MM, Nematullaev TK, Khamdamova EG. Optimization of the anesthetic approach for coloproctological operations in patients with concomitant cardiovascular disease (literature review). Achievements of Science and Education. 2019;(12):49-52.

7. Matlubov MM, et al. Hemodynamic indicators in pregnant women with obesity of various degrees of expression. Eur J Mol Clin Med. 2021;8(2):2373.
8. Sharipov IL. Evaluation of the combined use of extracorporeal detoxification methods in children with renal failure. Doctor-Graduate Student. 2012;54(5.2):332-341.
9. Sharipov IL. The use of ECD in the treatment of acute renal failure and chronic renal failure in children, assessment of its degree of effectiveness. Medical and Science Journal. 2012;13.
10. Sharipov IL, Xolbekov BQ, Akramov BR. Hemodynamic gradations with combined use of extracorporeal detoxification methods in children with renal failure. Eur J Mol Clin Med. 2020;7(3):2555-2563. EDN: PPDWZO.
11. Sharipov IL, Qurbanov NZ, Rakhmonov S. Improving airway patency during operations in the maxillofacial region in children. Web of Scientist: International Scientific Research Journal. 2023;4(12):140-145.
12. Sharipov IL, Xolbekov BK, Kurbonov NZ. Children improvement of anesthesia in ophthalmological surgery. World Scientific Research Journal. 2023;20(1):107-112.
13. Kurbanov NZ, Sharipov IL. Improvement of anesthetic protection in simultaneous operations on abdominal and pelvic organs. World Scientific Research Journal. 2023;20(1):113-116.
14. Kurbanov NZ, Sharipov IL. Improving anesthetic protection and blood pressure control in simultaneous abdominal and pelvic operations in obese patients. Journal of Applied Medical Sciences. 2023;7(1):97-101.
15. surgery in children. Pediatric Surgery. 2020;24(S1).
16. Brophy PD. Renal supportive therapy for pediatric acute kidney injury in the setting of multiorgan dysfunction syndrome/sepsis. Semin Nephrol. 2018;28(5):457-469.
17. Borrego Utiel FJ, Segura Torres P, Barrio MP. How do disorders related to hospitalisation influence haemodialysis patients' nutrition? Nefrologia. 2016;31(4):471-483.
18. Joniev SSh, Rakhimov AU, Babazhanov AS. The value of biochemical parameters during preoperative preparation of patients with nodular goiter. Science and World. 2013;(10):136.
19. Kimmel PL, Patel SS. Quality of life in patients with chronic kidney disease: focus on end-stage renal disease treated with hemodialysis. Semin Nephrol. 2016;26(1):68-79.
20. Matlubov MM, Nematullaev TK, Khamdamova EG. Optimization of the anesthetic approach for coloproctological operations in patients with concomitant cardiovascular disease (literature review). Achievements of Science and Education. 2019;(12):49-52.
21. Matlubov MM, et al. Hemodynamic indicators in pregnant women with obesity of various degrees of expression. Eur J Mol Clin Med. 2021;8(2):2373.
22. Sharipov IL. Evaluation of the combined use of extracorporeal detoxification methods in children with renal failure. Doctor-Graduate Student. 2012;54(5.2):332-341.
23. Sharipov IL. The use of ECD in the treatment of acute renal failure and chronic renal failure in children, assessment of its degree of effectiveness. Medical and Science Journal. 2012;13.
24. Sharipov IL, Xolbekov BQ, Akramov BR. Hemodynamic gradations with combined use of extracorporeal detoxification methods in children with renal failure. Eur J Mol Clin Med. 2020;7(3):2555-2563. EDN: PPDWZO.
25. Sharipov IL, Qurbanov NZ, Rakhmonov S. Improving airway patency during operations in the maxillofacial region in children. Web of Scientist: International Scientific Research Journal. 2023;4(12):140-145.
26. Sharipov IL, Xolbekov BK, Kurbonov NZ. Children improvement of anesthesia in ophthalmological surgery. World Scientific Research Journal. 2023;20(1):107-112.
27. Kurbanov NZ, Sharipov IL. Improvement of anesthetic protection in simultaneous operations on abdominal and pelvic organs. World Scientific Research Journal. 2023;20(1):113-116.
28. Kurbanov NZ, Sharipov IL. Improving anesthetic protection and blood pressure control in simultaneous abdominal and pelvic operations in obese patients. Journal of Applied Medical Sciences. 2023;7(1):97-101.

Entered 20.08.2025