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Experimental and Clinical Transplantation

Program & Abstract Book

OFFICIAL JOURNAL OF THE MIDDLE EAST SOCIETY FOR ORGAN TRANSPLANTATION

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Experimental and Clinical Transplantation

Official Journal of the Middle East Society for Organ Transplantation

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EDITORIAL POLICY

MISSION

Experimental and Clinical Transplantation (ECT) is the official journal of the Middle East Society for Organ Transplantation (MESOT). The Society was originally founded in Turkey in 1987, and was subsequently incorporated at Bern, Switzerland, in 1988 as a non-profit, international, scientific organization comprising 20 countries of the Middle East, North Africa, Mid-Asia, and neighboring nations.

The aim of the journal is to provide a medium forum for where clinical scientists, basic scientists, ethicists, and public health professionals to communicate ideas and advances in the field of experimental and clinical organ and tissue transplantation, and to discuss related social and ethical issues. The topics will be of interest to transplant surgeons, clinicians in all major disciplines and subspecialties, basic science researchers, and other professionals involved with sociological aspects of experimental and clinical transplantation.

Experimental and Clinical Transplantation is a peer-reviewed international publication that accepts manuscripts of full-length original articles, case reports, letters to the editor, and invited reviews. It is published in English bimonthly (February, April, June, August, October, and December).

Our editorial team is committed to producing a journal of extremely high standards. The journal is fully indexed in EBSCO, Excerpta Medica, Index Medicus, Journal Citation Reports/ Science Edition, MEDLINE, Science Citation Index Expanded™, and Turkey Citation Index. Full-text articles are available on the Internet via PubMed or at the Journal's Web site, at **http://www.ectrx.org**. ECT is also available as hard-copy bound volumes by subscription, printed on acid-free paper.

SCOPE

The scope of the journal includes the following:

- Surgical techniques, innovations, and novelties
- Immunobiology and immunosuppression
- Clinical results
- Complications
- Infection
- Malignancies
- Organ donation
- Organ and tissue procurement and preservation
- Sociological and ethical issues
- Xenotransplantation

ETHICS

The Journal expects that all procedures and studies involving human subjects have been reviewed by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in **The Helsinki Declaration** as well as **The Declaration of Istanbul on Organ Trafficking and Transplant Tourism**. Manuscripts must contain a statement to this effect.

All authors are required to sign an ethical disclosure form stating that they have not been involved in commercial transactions or other unethical practices in obtaining donor organs, and that no organs or tissues from executed prisoners have been used in this research.

Experimental and Clinical Transplantation adheres to the ethical principles outlined by COPE (Committee on Publication Ethics).

SUBSCRIPTION RATES

MESOT Members*
Single Issue: $20.00
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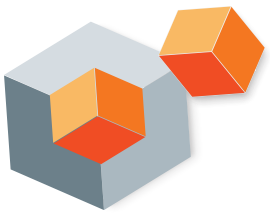
Non- MESOT Members
Single Issue: $50.00
Annual Subscription: $250.00

Institutions
Annual Subscription: $1000.00



* These rates and terms are not applicable, if membership dues not paid for two consecutive years.

Twelve issues per year, appearing in January, February, March, April, May, June, July, August, September, October, November and December

Shipping Outside Turkey
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Yayın Şekli: Aylık-İngilizce
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EDITORIAL POLICY FOR **LIVING DONOR TRANSPLANTATION**

Dear Colleagues,

Kindly be reminded of our Editorial Policy regarding **Living Donation** in transplantation.

As per our acceptance criteria, donor must be a relative (up to the 4th degree) or spouse of the recipient and over 18 years old. We would like to **remind** all of you that as per our Journal policy, we do not accept any papers that involve transplantation from **living unrelated donors**.

In the recent period (from January 2019 to present), 662 manuscripts have been submitted to our Journal from various countries throughout the world. Out of these 662 manuscripts, a decision has been made for 554 manuscripts and **377 (68%)** of them were **rejected**. Of these 377 rejected manuscripts, **55 (14.6%)** of them have been rejected as they involved transplantation from **unrelated living donors**.

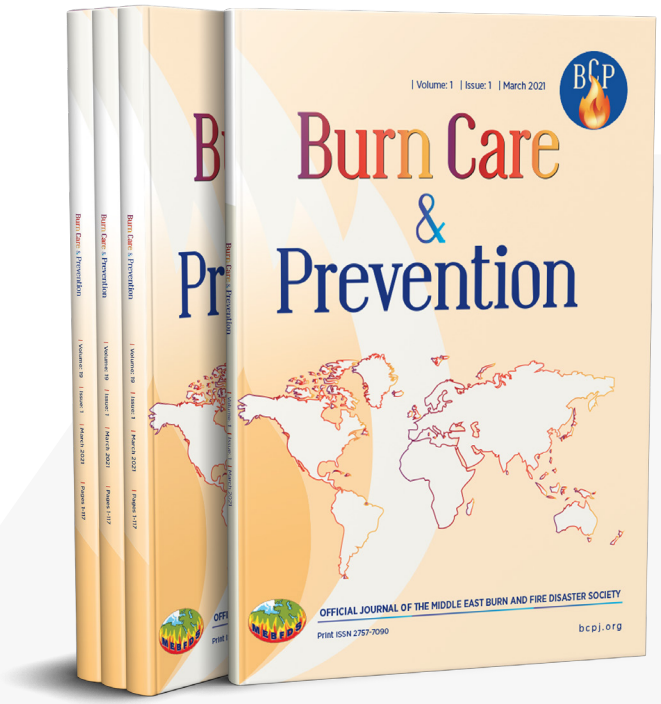
We hope that an increase in such policies will help to underline the importance of the legal and ethical aspects of transplantation. Please feel free to contact us regarding any comments as our aim is to contribute to the transplantation field in the world.

Please keep safe and healthy during these times of Covid-19 pandemic.

Sincerely,

Mehmet Haberal, MD, FACS (Hon), FICS (Hon), FASA (Hon), FIMSA (Hon), Hon FRCS (Glasg)
Editor-in-Chief
Experimental and Clinical Transplantation

4 issue per year



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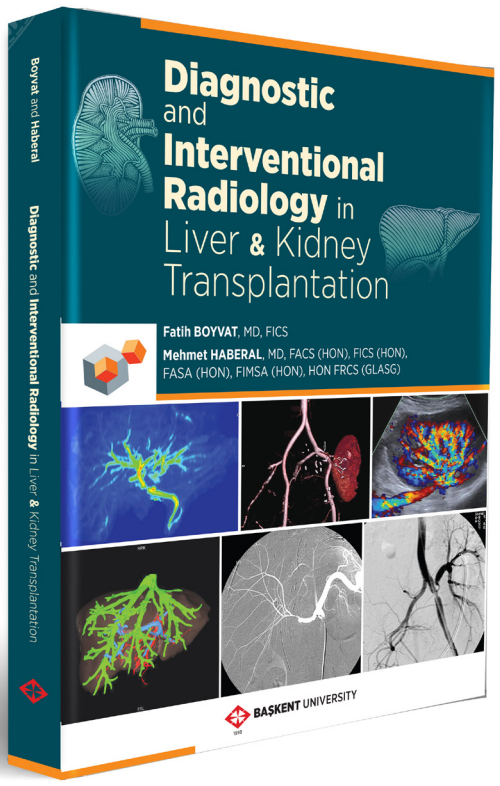
To Our Esteemed Colleagues,

We are proud to present you with our new journal, **Burn Care and Prevention,** which will be published 4 issues a year; **March, June, September** and **December**. **Burn Care and Prevention** aims to create an arena to exchange information among all engaged in the field of burn care and prevention.

We would like to extend our sincere thanks for your support, and we look forward to receiving your manuscripts.

bcpj.org

https://mc.manuscriptcentral.com/bcpj



Diagnostic and **Interventional Radiology** in Liver **&** Kidney Transplantation

Fatih BOYVAT, MD, FICS

Mehmet HABERAL, MD, FACS (HON), FICS (HON), FASA (HON), FIMSA (HON), HON FRCS (GLASG)

Transplant medicine remains one of the most challenging and complex areas of modern medicine. Although important medical breakthroughs such as immunosuppressive drugs have allowed for more organ transplants and a longer survival rate, transplant professionals still face serious problems, especially with regard to achieving correct diagnosis and treating postoperative complications.

Advances in imaging techniques, including in computed tomography, magnetic resonance imaging, and ultrasonography, and the use of interventional radiology have allowed transplant professionals to provide more accurate results both for diagnosis and for treatment of complications that occur after liver and kidney transplant. Moreover, with the use of interventional radiology, transplant professionals can now reach deep structures of the body, enabling correct diagnoses and treatment without performing surgery.

Publisher BAŞKENT UNIVERSITY 1993

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rectorate@baskent.edu.tr

MESOT Fellowship Program in Organ Transplantation

The Middle East Society for Organ Transplantation is pleased to announce the establishment of the MESOT Fellowship Program. The program, which will be 1-2 years in duration, has been created for physicians and surgeons from the Middle East region willing to acquire particular skills related to clinical and medical aspects of organ transplantation.

The objective of this program is to promote and advance organ transplantation in underserved areas of the region by helping physicians to establish new programs or improve already existing ones. In addition to liver, kidney, pancreas, heart and cornea transplant fellowships, training will be offered in various other departments to support the multidisciplinary nature of transplantation, including gastroenterology, nephrology, cardiology, immunology, radiology, pathology, infectious diseases and intensive care.

A limited number of grants will also be available, with recipients being determined by the Fellowship Program Committee.

Further information can be found online at **http://www.mesot-tx.org/home/fellowship.php**, where candidates may also apply online. The application deadline is the 30th of June of each year.

Inquiries may be directed to the Chairman of the MESOT Fellowship Program Committee:

Mustafa Al-Mousawi, MD, FRCS
Chairman, MESOT Fellowship Program Committee
P.O. Box 288, Safat 13003
Kuwait

Fax: +965 24848615
Email: drmosawi@yahoo.com

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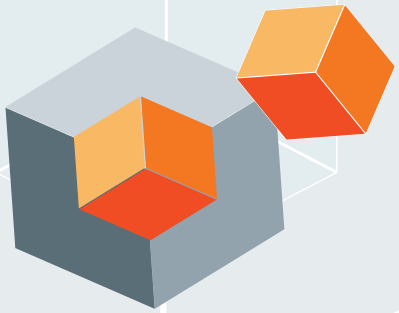
International Center for Transplant Ethics

We are proud to announce the establishment of the International Center for Transplant Ethics under the aegis of the World Academy of Medical, Biomedical and Ethical Sciences at Başkent University

The center's mission is:

- to provide leadership in ethical activities and policy
- to promote ethical activities in transplantation
- to introduce ethically sound procurement policies and practice in order to prevent exploitation of individuals as organ providers based on human dignity and human rights.



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International Symposium on Organ Donation and Transplantation in Kyrgyzstan

May 22, 2026
Bishkek, Kyrgyzstan

Organized by:
Turkic World Transplantation Society (TDTD)

Supporters:
Ministry of Health of Kyrgyzstan
The Turkish Transplantation Society (TOND)
Middle East Society for Organ Transplantation (MESOT)
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Welcome Message

Dear Colleagues,

It is my great pleasure to announce the ***International Symposium on Organ Donation and Transplantation in Kyrgyzstan*** to be held on May 22, 2026 in Bishkek, Kyrgyzstan. Meeting will be organized by the Turkic World Transplantation Society (TDTD) and will be supported by the Ministry of Health of Kyrgyzstan, The Turkish Transplantation Society (TOND), the Middle East Society for Organ Transplantation (MESOT) and Baskent University.

I founded the Turkic World Transplantation Society (TDTD) on December 15, 2014. TDTD aims to create an arena of communication and collaboration in the field of organ transplantation among the Turkic States of the world inclusive of Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. TDTD has already organized 4 international congresses (Astana 2015, Baku 2016, Ankara 2017, and Tashkent 2019) and is affiliated to The Transplantation Society (TTS).

Although the main purpose of the Symposium is to support and contribute to the development of organ donation and transplantation activities in Kyrgyzstan, it will also encourage colleagues in the Mid Asia region establishing successful treatments for end stage organ disease.

The symposium will be designed to provide an innovative and comprehensive overview of the latest developments in experimental and clinical tissue and organ transplantation. The conference will match the high standards set by our previous international meetings and this will be an excellent opportunity for both younger members of the profession and distinguished faculty from the world over to partake in intellectual exchange and share experiences.

We strongly encourage you to attend the meeting and look forward to welcoming you to Bishkek in May 22, 2026.

Yours sincerely,

Mehmet Haberal, MD, FACS (Hon), FICS (Hon),
FASA (Hon), FIMSA (Hon), Hon FRCS (Glasg)
Founder and Founder President, Baskent University
President of the Executive Supreme Board, Baskent University
Chair, Baskent University Division of Transplantation and Burns
Past-President, The Transplantation Society
Past-President, International Society for Burn Injuries
Distinguished Fellow, Royal Society of Medicine
Foreign Partner, Academy of Athens
Founder and Past President, Middle East Society for Organ Transplantation
Founder and President, Turkish Transplantation Society
Founder and President, Turkic World Transplantation Society
Founder and President, Turkic World Transplantation Society
Editor-in-Chief, *Experimental and Clinical Transplantation*
Editor-in-Chief, *Burn Care and Prevention*

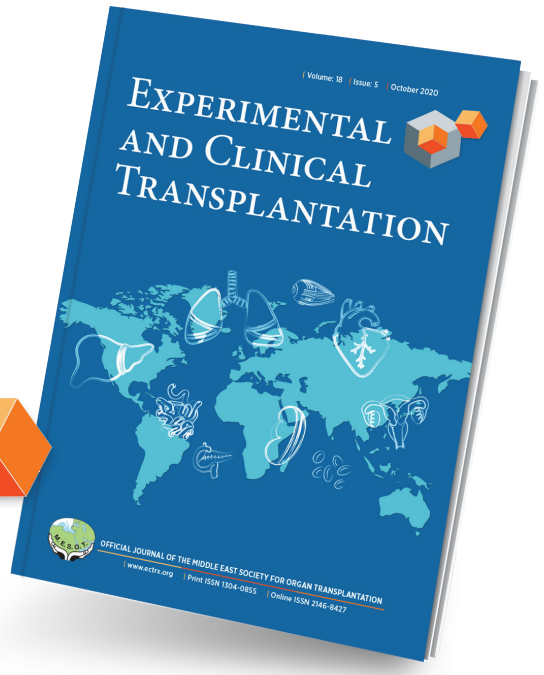
International Symposium on Organ Donation and Transplantation in Kyrgyzstan

May 22, 2026
Bishkek, Kyrgyzstan

Organized by:
Turkic World Transplantation Society (TDTD)

Supporters:
Ministry of Health of Kyrgyzstan
The Turkish Transplantation Society (TOND)
Middle East Society for Organ Transplantation (MESOT)
Baskent University

Full texts of presented abstracts will be published in the journal **Experimental and Clinical Transplantation (ECT)**



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Scientific Program

FRIDAY, MAY 22

08:00-13:00 **On-Site Registration**

08:00-09:00 ***Registration of Participants and Welcome Coffee Break***

OPENING CEREMONY

09:00-10:00 *Moderator*
Dr. Damirbek Asilbekovich Osmonov
Minister of Health, Republic of Kyrgyzstan

09:05-09:10 **Adylbek Aleshovich Kasymaliev**
Chairman of the Cabinet of Ministers
Head of the Presidential Administration of the Kyrgyz Republic

09:10-09:15 **H. E. Mekin Mustafa Kemal Ökem**
Turkish Ambassador to the Republic of Kyrgyzstan

09:15-09:20 **Mehmet Haberal**
Founder and Founder President, Baskent University
Founder and President, Turkic World Transplantation Society (TDTD)

09:20-09:25 ***Award ceremony on behalf of the Cabinet of Ministers of the Kyrgyz Republic***

09:25-09:30 *Group Photo Session*

09:30-10:00 *Press briefing for Media Representatives*

09:00-09:15 **COFFEE BREAK**

10:00-12:00 **SESSION 1**
Chairpersons: *Mehmet Haberal, Dr. Damirbek Asilbekovich Osmonov*

10:00-10:10 **L1 Mehmet Haberal** *(Türkiye)*
Baskent University Transplantation Activities in Mid Asia

10:10-10:20 **L2 Mohammad Ghnaimat** *(Jordan)*
Cardiovascular Diseases after Transplantation

10:20-10:30 **L3 Bassam Saeed** *(Syria)*
The Impact of Living-Unrelated Transplant on Establishing Deceased-Donor Program in Syria

10:30-10:40 **O1 Emre Karakaya** *(Turkey)*
Historical Evolution of Organ Transplantation in Turkey: The Pioneering Role of Başkent University

10:40-10:50 **O2 Aidar Sitkazinov** *(Kazakhstan)*
Activity and Effectiveness of the Organ Donation System in the Republic of Kazakhstan

10:50-11:00 **O3 Aleh Kalachyk** *(Belarus)*
Organization of Transplant Care in Belarus: Outcomes of Kidney Transplantation Program

11:00-11:10 **O4 Rashad Sholan** *(Azerbaijan)*
The Retrospective Study on Living Donor Kidney Transplantation in Azerbaijan: Sholan`s Team Outcomes

11:10-11:20 **O5 Sedat Yıldırım** *(Türkiye)*
Cadaveric Liver and Kidney Procurement: Surgical Techniques In Modern Practice

11:20-11:30 **O6 Azizbek Ismatov** *(Uzbekistan)*
Kidney Paired Donation in Two ABO-Incompatible Recipient–Donor Pairs:First Clinical Experience with DesensitizationStrategy and Early Post-Transplant Outcomes: Clinical Case

11:30-11:40 **O7 Azizbek Ismatov** *(Uzbekistan)*
Kidney Transplantation in a Highly Sensitized Patient with Type 2 Diabetes Mellitus: A Single-Center Clinical Experience

11:40-11:50 **O8 Ismoil Rustamov** *(Uzbekistan)*
Results of the First Living-Related Kidney Transplants from ABO-Incompatible Donors

11:50-12:00 **O9 Murat Muratoğlu** *(Türkiye)*
The Relationship Between Infectious Parameters and the Development of Acute Kidney Injury in Adult Renal Transplant Patients Presenting to the Emergency Department with Diarreha

12:00-13:00 **LUNCH**

13:00-14:15 **SESSION 2**
***Chairpersons:** Dr. Bakytbek Kaipybekovich Kadyraliev, Mohammad Ghnaimat, Sedat Yıldırım*

13:00-13:15 **L4 Bassam Saeed** *(Syria)*
Recurrent Disease in Pediatric Renal Transplantation

13:15-13:25 **O10 Esra Baskın** *(Türkiye)*
Kidney Transplantation in Children

13:25-13:35 **O11 Urinov Zh.B** *(Uzbekistan)*
Immediate Results of Kidney Transplantation from Living Related Donors in Children

13:35-13:45 **O12 Murat Özkan** *(Türkiye)*
Heart Transplantation for Adult and Pediatric Patients

13:45-13:55 **O13 Shaiirbek Sulaimanov** *(Kyrgyzstan)*
Pediatric Kidney Disease and Renal Replacement Treatment in Kyrgyzstan in 2021-2025

13:55-14:05 **O14 Elmurodova N.B.** *(Uzbekistan)*
Comparison of Pregnancy Outcomes in Recipients with Kidney Transplantation

14:05-14:15 **O15 Murat Muratoğlu** *(Türkiye)*
Infection Risk Score in Renal Transplant Recipients (RT–ERS)

14:15-14:30 **COFFEE BREAK**

14:30-15:40 **SESSION 3**
Chairpersons: *Bassam Saeed, Sedat Boyacıoğlu*

14:30-14:40 **O16...**

14:40-14:50 **O17 Kakhaber Kashibadze** *(Georgia)*
Comparative Analysis of Outcomes in Adult Living Donor and Deceased Donor Liver Transplantation: A Systematic Review

14:50-15:00 **O18 Bolatbek Baimakhanov** *(Kazakhstan)*
Development of Liver Transplantation at the A.N. Syzganov's National Scientific Center of Surgery

15:00-15:10 **O19 Lasha Mikeladze** *(Georgia)*
Beyond Milan: A Biology-Driven and Living Donor- Focused Evolution of Liver Transplantation for Hepatocellular Carcinoma

15:10-15:20 **O20 Ayana Mussina** *(Kazakhstan)*
Biliary Complications after Living Donor Liver Transplantation Depending on the Anatomy Structure of Bile Duct According To the Modified Huang Classification

15:20-15:30 **O21 Rasul Sultangaziev** *(Kyrgyzstan)*
Results of the First Orthotopic Living Donor Liver Transplantation and Liver Autotransplantation in the Kyrgyz Republic

15:30-15:40 **O22 Davit Beridze** *(Georgia)*
Right Lobe Living Donor Liver Transplantation: Is Middle Hepatic Vein Reconstruction Optional or Essential?

15:40-16:00 **COFFEE BREAK**

16:00-17:20 **SESSION 4**
Chairpersons: *Mira Isayeva, Esra Baskın*

16:00-16:10 **O23 Pınar Zeyneloğlu** *(Türkiye)*
Determination of Brain Death

16:10-16:20 **O24 Pulat Sultanov** *(Uzbekistan)*
Organ Donation and Transplantation: Legal Aspects of the Activity

16:20-16:30 **O25 Leyla Ismagambetova** *(Kazakhstan)*
Ethical and Legal Aspects of Transplantation in Kazakhstan

16:30-16:40 **O26 Emirlan Kubanychbekov** *(Kyrgyzstan)*
Experience of a Training Program in Turkey on Anesthetic Management of Liver and Kidney Transplantation and Its Practical Application in the Kyrgyz Republic

16:40-16:50 **O27 Adnan Torgay** *(Türkiye)*
Anesthesia for Liver and Kidney Transplantation: A Multidisciplinary Perspective

16:50-17:00 **O28 Seitbek uulu B.** *(Russian Federation)*
Launching a Transplant Program at a Regional Center: First Living Donor Liver Transplantation in Southern Kyrgyzstan

17:00- 17:10 **O29 B. Handan Özdemir** *(Türkiye)*
Age-Dependent Differences in Pediatric Versus Adult Kidney Transplantation: Impaired VEGF and NO Signaling Weaken Microvascular Integrity and Threaten Renal Graft Survival

17:10- 17:20 **O30 K.M.Mamakeev** *(Kyrgyzstan)*
Liver Transplantation in the Kyrgyz Republic: From Iniotial Success to Systematic Implementation

17:20-17:30 **O31 S.V. Spiridonov** *(Belarus)*
Heart Transplantation in the Republic of Belarus

17:30-17:40 CLOSING CEREMONY

L1

Baskent University Transplantation Activities in Mid Asia

Mehmet Haberal, MD, FACS (Hon), FICS (Hon), FASA (Hon), FIMSA (Hon), Hon FRCS (Glasg)

Founder and Founder President, Baskent University

President of Executive Supreme Board, Baskent University

Chair of Division of Transplantation and Burns, Baskent University

Foreign Partner, Academy of Athens

Distinguished Fellow, Royal Society of Medicine

Past-President, The Transplantation Society

Past-President, International Society for Burn Injuries

Founder and Past President, Middle East Society for Organ Transplantation

Founder and President, Turkish Transplantation Society

Founder and President, Turkic World Transplantation Society

Founder and Editor-in-Chief, *Experimental and Clinical Transplantation*

Founder and Editor-in-Chief, *Burn Care and Prevention*

Since the past 25 years, Professor Mehmet Haberal and Baskent University have been working with colleagues in the Mid Asia region to assist them in establishing successful treatments for end stage organ disease. It began in 1993, with the education and training of nephrologists from Azerbaijan at Baskent University Hospital in Ankara, followed, in the same year, with the establishment of a dialysis center in Baku. This was the first step in collaboration with the region at large.

Some years later, in 2014, Baskent University was approached for assistance and leadership in establishing liver transplantation in Kazakhstan. Having agreed to contribute in any way possible, a team from Baskent University, travelled to Astana in November 2014 to perform the first pediatric kidney transplant on a 9-year old girl at the National Research Center for Maternal and Child Health. Same year, Prof. Haberal and his team again travelled to Astana to perform 4 transplants. Two liver transplants were performed on a 1-year old baby noted as the first pediatric liver transplant in the country, followed by a 6- month old baby noted as the second pediatric liver transplant at the National Research Center for Maternal and Child Health, donor was father for both transplants. The following year, in 2015, the team returned to Astana to perform 2 liver and 1 kidney transplant at the JSC National Medical Center.

The transplant professionals in Kazakhstan in particular were keen to continue this cooperation. In ensuing discussions with Prof. Haberal, it was agreed that a transplant society for the region should be established to create an arena of communication and collaboration in the field of organ transplantation among the Turkic States of the world: Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Turkmenistan, and Uzbekistan.

As a result, the Turkic World Transplantation Society (TDTD) was founded by Professor Mehmet Haberal on December 15, 2014. TDTD aims to create an arena of communication and collaboration in the field of organ transplantation among the Turkic States of the world inclusive of Turkey, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan. TDTD has already organized 4 international congresses (Astana 2015, Baku 2016, Ankara 2017, and Tashkent 2019) and is affiliated to The Transplantation Society (TTS).

Professor Haberal and his team also continued to travel abroad for the purpose of performing transplant surgeries and their initial surgeries in Kazakhstan were followed in April 2018 with 3 living-related kidney transplants at the Republic Research Center of Emergency Medicine in Tashkent, Uzbekistan. Of these 3 transplants, 1 was performed on a 14-year old patient and was the first pediatric kidney transplant in Uzbekistan. Just one month later, in May 2018, Prof. Haberal and his team returned to Tashkent to perform 6 more kidney transplants (a total of 12 surgeries) over a period of just 2 days. Of these, 1 was the first living transplant between spouses.

Successful organ transplantation improves the well-being of patients with end-stage organ failure. In low- and middle-income countries (LMICs) with inadequate facilities for dialysis, transplant appears to offer a better option for those patients. With their efforts in the area, Prof. Haberal and TDTD are actively encouraging LMIC centers to start kidney and liver transplant procedures to prevent patients seeking transplant services outside their country, which are often at exorbitant costs with equal if not less favorable results, and can even lead to cases of unethical transplantation practice.

Training of local health professionals is a key component

of a successful program. In keeping with its goals, Baskent University took a leading role in promoting and encouraging education and research by accepting a large number of fellows from each country to train in the various disciplines, including surgery, anesthesiology, emergency and trauma care.

Of course, it goes without saying that education and public awareness of availability of the service is essential for these programs to flourish. As such, the organization of congresses, and use of the mass media becomes paramount in this effort to build successful transplant programs in these areas.

International partnerships have become essential for success. The cooperation between TDTD and the Turkish Transplantation Society is one such example. In this context, by creating a platform for education, training, and knowledge-sharing, TDTD has become the backbone for the development of such programs in the Turkic States.

Lecture

L2

Cardiovascular Diseases after Transplantation

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Cardiovascular disease is the leading cause of death non-related to graft loss in KTRs (~30% of deaths), KTRs have higher CVD risk than general population and risk increases over time, Cumulative incidence of CVD after transplant: UK 5.4% at 5 years and 14.3% at 10 years, US ~8.3% at 5 years.

Cardiovascular events contribute substantially to hospitalizations and graft loss.

The pathophysiology of cardiovascular diseases after transplantation involves a combination of traditional risk factors which may be Modifiable (Hypertension, diabetes, dyslipidemia and non-modifiable (age, gender, genetic predisposition and ethnicity) and non-traditional factors (uremia-related, inflammation, vascular calcification).

Transplant-specific contributors play a major role as well like, Immunosuppressive drug effects, Perioperative stress, Graft dysfunction and Infections.

I will be discussing the commonest and most important risk factors, screening of patients prior to transplantation, treatment and follow up of patients after transplant.

L3

The Impact of Living-Unrelated Transplant on Establishing Deceased-Donor Program in Syria

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Consultant Pediatric Nephrologist
President, Farah Association for Child with Kidney Disease in Syria
Chair if the ISN Middle East Regional Board

Liver transplant is the criterion standard for patients with end-stage liver disease. Yet there is no liver transplant in Syria. Traveling abroad for a liver transplant is a luxury few Syrians can afford.

There is currently an on-going debate whether to start a liver transplant program using living or deceased donors. In 2003, a new law was enacted, authorizing the use of organs from volunteer strangers and deceased donors. Despite the positive aspects of this law (allowing unrelated donors to increase the number of transplants in the country); the negative aspects also were obvious. The poor used the law to sell their organs to the rich, and this model is in violation of the Istanbul Declaration.

To better document transplant communities' perceptions on organ donation, an e-mail survey was sent to a nationally representative sample of physicians (n = 115) that showed that 58% of respondents did not support the start of liver transplant from live donors, as they fear a considerable risk for the donor and the recipient. Seventy-one percent of respondents believe that unrelated kidney donation has contributed to tarnishing the reputation of transplant, and 56% believe that a deceased-donor program can run in parallel with unrelated organ donations. The interest in deceased-donor program has been affected negatively by the systematic approach of using poor persons as the source of the organ. This lack of interest has affected starting a liver program that relies on deceased donors; especially the need for kidneys is more than livers. Health authorities in Syria were inclined to initiate a liver transplant program from live donors, despite the risks of serious morbidities and mortality

Conclusion: Paid kidney donation in actual effect is actually a hindrance to establishing a deceased-donor liver program.

L4

Recurrent Disease in Pediatric Renal Transplantation

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Renal transplantation (Tx) is the treatment of choice for end-stage renal disease. The risk of disease recurrence after renal Tx is relatively high in children and may lead to graft loss, representing 7–8 % of all graft failures. The current overall graft loss to acute rejection has become comparable to the rate of graft loss to disease recurrence. The spectrum of recurrence is rather wide and mainly depends on the primary disease itself, Recurrence of the full disease may be associated with either a high risk of graft loss (FSGS, MPGN, oxalosis, atypical HUS) or with a low risk of graft loss (IgA nephropathy, lupus, ANCA-associated glomerulonephritis).

Adequate strategies should therefore be added to kidney Tx, such as pre-Tx genotyping, adequate donor selection, specific immunosuppression and/or biotherapy, associated liver Tx, etc. Under such conditions, very few patients would be excluded from kidney Tx only because of a major risk of disease recurrence.

Changes in immunosuppression protocols during the last decades have not significantly influenced the incidence of recurring diseases post-Tx. Unfortunately, there is limited evidence on the management of post-Tx disease recurrence, and clinical practice is usually based on non-randomized and uncontrolled case series.

In the near future, the issue of disease recurrence after kidney Tx may benefit from new approaches to alternatives to organ Tx such as biotherapy, cell therapy, gene therapy, chaperone molecules, etc. The use of international registries and databases is of major concern in any project including interventional study.

01

Historical Evolution of Organ Transplantation in Turkey: The Pioneering Role of Başkent University

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The history of solid-organ transplantation in Turkey reflects a progressive evolution driven by pioneering surgical efforts, institutional development, and legislative advancements. The journey began in 1969 with the first heart transplant attempts. A major milestone followed in 1975 with the first successful living-donor kidney transplantation performed by the team led by Mehmet Haberal. Subsequent achievements included the first cadaveric kidney transplantation in 1978 and the enactment of a national organ transplantation law in 1979, which provided a critical legal framework and later served as a model internationally.

During the 1980s, collaborations with international organizations such as Eurotransplant and the South Eastern Organ Procurement Foundation facilitated access to cadaveric organs. The establishment of key institutions, including the Turkish Organ Transplantation and Burn Treatment Foundation (1980) and the Middle East Society for Organ Transplantation (1987), played a crucial role in advancing transplantation practices in the region.

A major breakthrough was achieved in 1988 with the first successful cadaveric liver transplantation in Turkey, performed by the same pioneering team. This was followed by the initiation of a national organ-sharing program in 1989, significantly improving coordination among transplant centers. In 1990, the first living-donor liver transplantations—both pediatric and adult—were successfully carried out, marking a new era in regional transplantation.

Further innovations included multiple-organ harvesting from living donors and the development of refined surgical techniques that reduced vascular complications. These cumulative efforts, driven by the vision and leadership of Mehmet Haberal and his colleagues at Başkent University, established Turkey as a leading center for transplantation.

The contributions of Başkent University have been instrumental in shaping both national and international transplantation practices through sustained innovation, education, and system development.

Oral

02

Activity and Effectiveness of the Organ Donation System in the Republic Of Kazakhstan

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Introduction: Since the first heart transplantation performed in 2012, the Republic of Kazakhstan has developed a national transplantation service model based on the Spanish coordination system and supported by a digital infrastructure — the Medical Information System for Donor and Recipient Registry (MISDR). A specific feature of the current legal framework in the Republic of Kazakhstan is the "requested consent" model introduced in 2019, under which the final decision regarding organ procurement is made only after obtaining agreement from the relatives of a potential donor, even if the donor had provided prior consent during their lifetime. This study analyzes donor activity indicators for the period 2012–2025 and evaluates the impact of this legal feature on the overall effectiveness of the deceased donor program.

Methods: The study is based on a retrospective analysis of data from the Ministry of Health of the Republic of Kazakhstan and the Medical Information System for Donor and Recipient Registry (MISDR). The analysis included quantitative indicators of performed transplantations, the dynamics of potential and actual donors, and the impact of the 2020 Code of the Republic of Kazakhstan on clinical practice. System performance was assessed at national, regional, and hospital coordination levels within the framework of the implemented three-tier coordination model.

Results: During the study period, a total of 3,120 transplantations were performed in Kazakhstan. Living donation predominates in the donor structure, accounting for 2,605 procedures (83.5%), while transplantations from deceased donors totaled 515 (16.5%). Organs obtained from deceased donors were distributed as follows: kidneys accounted for 44% (n=227), heart for 22% (n=113), liver for 15% (n=78), lungs for 5% (n=26), and pancreas for 0.4% (n=2). The highest system performance indicators were recorded in 2024–2025. The number of potential donors increased from 86 to 184 (+114%), while the number of actual donors tripled from 6 to 18, which led to an increase in transplantations from deceased donors from 23 to 68 within one year. Despite this positive trend, the current effectiveness of the system remains constrained by a high rate of refusals from the families of potential donors.

Conclusions: The transplantation system in the Republic of Kazakhstan demonstrates a high level of surgical effectiveness while facing a persistent structural shortage of donor organs. The significant growth observed in 2025 confirms the operational readiness of the three-tier coordination model. However, one of the key factors limiting the development of deceased organ donation remains the "requested consent" legal model, in which the agreement of relatives is decisive. Further development of the system requires a comprehensive approach, including improvement of the regulatory framework, advancement of the MISDR digital infrastructure, and systematic public awareness efforts aimed at building trust in the institution of deceased organ donation.

Keywords: organ donation system; deceased donor program; family agreement; transplantation coordination; digital registry; Kazakhstan

Oral

03

Organization of Transplant Care in Belarus Outcomes of the Kidney Transplantation Program

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Background: Kidney transplantation is the most effective treatment for end-stage kidney disease that significantly improves patient survival and quality of life. Over the past decade, Belarus has developed a structured and well-functioning transplant care system including transplant coordination, organ allocation, and postoperative patient management. Objective: To evaluate the outcomes of the kidney transplantation program in Belarus.

Methods: A retrospective analysis of kidney transplant cases between 2015 and 2025 was performed. Key parameters included patient and allograft survival, waiting time, primary graft function and the incidence of postoperative complications.

Results: During the study period, 3868 kidney transplantations were performed. The average waiting time decreased approximately threefold. One-year graft survival reached 92%, while ten-year graft survival was 81%. The leading causes of kidney graft failure were rejection and chronic allograft nephropathy. Patient survival was 95% at 1-year post-transplantat and 81% at 10 years. Infectious complications were the main cause of mortality among kidney transplant recipients. Primary graft function was observed in approximately half of the patients. However, the implementation of hypothermic machine perfusion holds promise for improving this outcome. The overall incidence of post-transplant infectious complications was roughly 15%, with urinary tract infections and wound infections being the most common. Lymphocele and urinoma were the most frequent surgical complications.

Conclusions: The kidney transplantation program in Belarus demonstrates high clinical effectiveness and organizational efficacy. Further improvements are expected through optimization of post-transplant patient care and integration of advanced medical technologies.

04

The Retrospective Study on Living Donor Kidney Transplantation in Azerbaijan: Sholan`s Team Outcomes

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Background: End-stage renal disease (ESRD) poses a global health challenge, and living donor kidney transplantation (LDKT) is the preferred treatment due to improved outcomes. This study presents the first comprehensive analysis of LDKT outcomes in Azerbaijan, examining the clinical characteristics of patients, ESRD etiologies, and transplantation outcomes, performing by Rashad SHOLAN (MD, DSCi,PhD) – head of the international kidney transplantations team and his colleques at the two medical tertiary centers in Azerbaijan (Republican Diagnostic and Treatment Center and State Security Service Hospital)

Methods: A total of 208 patients with G4-G5 chronic kidney disease (CKD) undergoing LDKT between June 2017 and December 2024 were included. Data on demographics, ESRD etiologies, perioperative and postoperative parameters were collected and analyzed using descriptive statistics.

Results: The mean age of recipients was 34.8 ± 12.2 years, with diabetes mellitus and focal segmental glomerulosclerosis as leading CKD etiologies. Preemptive transplantation was performed in 15.9% of patients. Perioperative characteristics showed a mean surgery duration of 340 ± 74 minutes, and postoperative complications occurred in 3.4% of cases, with a median hospital stay of 8 days. At 12 months, cumulative graft survival was 91.7%, and overall survival was 96.2%, with COVID-19 as a prominent cause of death. Donors were mostly female, with a mean age of 48.3 years, and 83.6% of transplants were from blood relatives.

Conclusion: LDKT outcomes in Azerbaijan align with international standards; however, the low rate of preemptive transplantation and high incidence of undetermined CKD etiologies underscore the critical need for enhanced diagnostic frameworks and increased awareness. Advancing kidney transplantation in Azerbaijan requires enhanced infrastructure, education, and effective patient tracking to address follow-up challenges and improve outcomes.

Keywords: End-stage renal disease, kidney transplantation, living donor, Azerbaijan

05

Cadaveric Liver and Kidney Procurement: Surgical Techniques In Modern Practice

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Objective: Organ harvesting from deceased donors is a critical surgical step that directly affects transplantation success. Organ harvesting is one of the most critical stages determining graft viability and post-transplantation outcomes, requiring a high level of surgical precision, anatomical knowledge, and multidisciplinary coordination. The aim of this presentation is to evaluate kidney and liver harvesting techniques, surgical principles, and key factors determining graft outcomes in the multiorgan harvesting process.

Method: This study focused on surgical techniques related to kidney and liver harvesting, hemodynamic management of the donor in intensive care and during harvesting, and perfusion strategies. Donor stabilization, hemodynamic optimization, aortic clamping timing, cold perfusion techniques, and multiorgan coordination processes were systematically examined.

Result: The history of cadaveric organ transplantation began in the mid-20th century with pioneering experimental and clinical procedures that transformed the management of end-stage organ failure worldwide. The first human-to-human cadaver kidney transplant was performed in 1933 by Dr. Yurii Voronoy in Ukraine and was unsuccessful. The first successful cadaveric kidney transplant of the modern era was performed in 1962 by Joseph Murray using immunosuppressive drugs from a non-related cadaver. In 1963, Dr. Thomas Starzl transplanted the first human liver from a cadaver, achieving its first successful result in 1967. In 1963, Dr. James Hardy performed the first human cadaveric lung transplant from a donor who had suffered cardiac death. In 1967, Dr. Christiaan Barnard performed the world's first heart transplant by transplanting a heart from a donor who had died in a traffic accident. In Türkiye, organ transplantation achieved a major milestone under the leadership of Mehmet Haberal with the establishment of modern transplant programs

and the first successful deceased donor transplantations, laying the foundation for contemporary transplant surgery in the region. The first cadaveric (deceased-donor) kidney transplantation in Turkey was performed on October 10, 1978, at Hacettepe University by Prof. Mehmet Haberal using an organ supplied by Eurotransplant. The first local cadaveric kidney transplant in Turkey was later carried out on July 27, 1979, by the same team following the approval of the transplantation law.

Cadaveric liver and kidney procurement remains the cornerstone of modern transplantation and requires meticulous surgical planning, multidisciplinary coordination, and advanced technical expertise to ensure optimal graft quality. Successful retrieval depends on rapid donor assessment, hemodynamic stabilization, precise vascular dissection, and atraumatic organ recovery while minimizing warm ischemic injury. Particular attention must be directed toward aortic and caval control, preservation of hepatic arterial anatomy, portal vein integrity, and careful ureteral and renal vascular dissection during multiorgan procurement procedures. Standardized en-bloc and sequential retrieval techniques have significantly improved graft safety and transplantation outcomes.

Although static cold storage remains the conventional preservation strategy, ischemia-reperfusion injury continues to limit outcomes, especially in extended criteria and donation after circulatory death donors. Emerging machine perfusion technologies, including hypothermic oxygenated perfusion and normothermic machine perfusion, now provide opportunities for metabolic recovery, functional assessment, and ex-vivo organ rehabilitation.

Conclusion: Surgical precision, time management, and team coordination are fundamental determinants of transplantation success in kidney and liver harvesting processes. With current approaches and technological advancements, optimizing these processes significantly contributes to increasing graft survival.

Oral

06

Kidney Paired Donation in Two ABO-Incompatible Recipient–Donor Pairs: First Clinical Experience with Desensitization Strategy and Early Post-Transplant Outcomes. Clinical Case

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Introduction: Kidney cross–transplantation or Kidney Paired Donation (KPD) is a modern method of expanding the possibilities of living related donation in case of AB0 or immunological incompatibility of donor-recipient pairs.

Case report: Recipient 1, a 55-year-old patient diagnosed with type 2 diabetes mellitus complicated by diabetic nephropathy, blood group B (III) Rh+, and donor 1 (wife), blood group A (II) Rh+, as well as recipient 2, a 43-year-old patient diagnosed with mixed-form chronic glomerulonephritis, blood group A (II) Rh+, and donor 2 (husband), blood group B (III) Rh+, were admitted for kidney transplantation. Because both recipient–donor pairs demonstrated ABO incompatibility with their intended living donors, a kidney paired donation (KPD) strategy was initiated. Both donor–recipient pairs underwent standard pre-transplant evaluation. At admission, recipient 1 had the following laboratory parameters: serum creatinine 909 μmol/L, urea 26.4 mmol/L, blood glucose 5.84 mmol/L, glycated hemoglobin (HbA1c) 4.9%, urinary protein 26.4 g/L, estimated glomerular filtration rate (eGFR) 4 mL/min/1.73 m^2, and cystatin C 5.94 mg/L. Recipient 2 demonstrated serum creatinine 673 μmol/L, urea 21.8 mmol/L, blood glucose 5.1 mmol/L, HbA1c 4.0%, urinary protein 1.62 g/L, eGFR 9 mL/min/1.73 m^2, and cystatin C 5.55 mg/L. Immunological assessment for recipient 1 with donor 2 revealed 6 HLA mismatches, negative CDC crossmatch (T-cell donor negative, autologous control negative; B-cell donor negative, autologous control negative), and PRA results showing Anti-HLA

class I 0% and Anti-HLA class II 0%. Recipient 2 with donor 1 demonstrated 5 HLA mismatches, including HLA-DRB107, negative CDC crossmatch (T-cell donor negative, autologous control negative; B-cell donor negative, autologous control negative), with PRA showing Anti-HLA class I 48% (A33 MFI 3327; A26 MFI 3231) and Anti-HLA class II 13% (DR15 MFI 7094). Due to the presence of anti-HLA antibodies in recipient 2, combined desensitization therapy was performed, including serial plasmapheresis on days −7 and −1 before transplantation, rituximab administration on day −7, and thymoglobulin induction therapy. Subsequently, both recipients underwent heterotopic kidney transplantation into the right iliac fossa. Immediate graft function was observed in both recipients. In recipient 1, on postoperative day 4, blood glucose increased to 33 mmol/L, followed by deterioration of graft function. Two additional plasmapheresis sessions were performed, together with two doses of thymoglobulin 500 mg and pulse methylprednisolone therapy administered over five consecutive days (500/250/250/125/125 mg). Hyperglycemia was successfully controlled with insulin therapy and dietary correction. Following treatment, graft function normalized. Recipient 2 developed transient graft dysfunction on postoperative day 6, which was managed by two repeated thymoglobulin administrations (500 mg each) and methylprednisolone pulse therapy (500/250/250 mg). By postoperative day 8, graft function fully recovered. According to Doppler ultrasonography performed on postoperative day 13, no pathological vascular or parenchymal abnormalities were detected in either transplanted kidney.

Conclusion: Kidney paired donation enabled successful transplantation in two ABO-incompatible recipient–donor pairs. Despite early postoperative graft dysfunction in both recipients, individualized immunosuppressive correction and desensitization measures resulted in satisfactory short-term graft outcomes.

07

Kidney Transplantation in a Highly Sensitized Patient with Type 2 Diabetes Mellitus: A Single-Center Clinical Experience

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Introduction: Type 2 Diabetes is one of the leading causes of end-stage kidney disease, accounting for 30–45% of patients requiring renal replacement therapy. Although Kidney Transplantation remains the preferred treatment option for this patient population, preformed anti-HLA sensitization assessed by panel reactive antibodies (PRA/cPRA) significantly increases the risk of acute rejection, with reported rates reaching 20–30%. According to recommendations from KDIGO, UNOS/OPTN, and ERA-EDTA, sensitization status should be interpreted in relation to donor availability and population-specific immunological characteristics rather than by fixed threshold values alone. Kidney transplantation in highly sensitized recipients with negative CDC crossmatch remains a clinically challenging but increasingly relevant strategy.

Clinical Case: A 44-year-old woman with Type 2 Diabetes complicated by diabetic nephropathy and end-stage kidney disease was admitted for kidney transplantation evaluation. Baseline glomerular filtration rate was 6.87 mL/min/1.73 m^2. Her medical history included previous left-sided nephrolithiasis requiring surgical treatment and right nephrectomy complicated by postoperative wound infection and ventral hernia formation. At progression of uremia, laboratory parameters showed serum creatinine 563 μmol/L and urea 18.7 mmol/L. The patient refused maintenance hemodialysis. After conservative nephrological management, serum creatinine decreased to 294 μmol/L and urea to 11 mmol/L The living related donor candidate was her 49-year-old spouse. Immunological assessment demonstrated one HLA match (A03), five HLA mismatches, and negative CDC crossmatch. PRA level reached 78% (MFI 4226), indicating high immunological

risk. The likely cause of sensitization was an aggravated obstetric history consisting of nine pregnancies, including four abortions, three miscarriages, and two deliveries. A desensitization protocol was performed including serial plasmapheresis, Rituximab, and thymoglobulin, followed by heterotopic renal transplantation into the right iliac fossa. Immediate graft function was achieved after reperfusion. On postoperative day 5, transient graft dysfunction developed and was successfully managed with repeated plasmapheresis sessions and pulse glucocorticoid therapy. By postoperative day 8, graft function fully recovered. Steroid-induced hyperglycemia occurred during the postoperative period and was successfully controlled with insulin therapy. Doppler ultrasonography performed on postoperative day 25 revealed no pathological vascular or parenchymal abnormalities.

Conclusions: This clinical observation demonstrates that successful Kidney Transplantation is feasible in highly sensitized patients with Type 2 Diabetes and significant immunological burden when individualized desensitization strategies are applied. Serial plasmapheresis combined with B-cell-targeted and induction immunosuppressive therapy allowed effective reduction of antibody-mediated graft injury risk. These findings support expanding transplant eligibility in highly sensitized recipients with metabolic comorbidities under strict immunological monitoring.

Oral

O8

Results of the First Living-Related Kidney Transplants from ABO-Incompatible Donors

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ABO-incompatible living-related kidney transplantation is becoming a promising strategy for expanding the donor pool and reducing organ shortages. Although such transplantations remain relatively rare according to global literature, their implementation can significantly shorten waiting times for recipients. The first ABO-incompatible living-related kidney transplantation in our center was performed in May 2023. To date, a total of 22 such procedures have been carried out. All recipients were relatively young (28–50 years old) and had varying baseline anti-ABO antibody titers (mean titer 1:32). Crossmatch results (CDC/Flow Crossmatch) were negative in all cases. All recipients received uniform dual immunosuppressive therapy prior to transplantation: a calcineurin inhibitor (tacrolimus [Prograf/Adport]) combined with mycophenolic acid preparations (CellCept). For induction therapy, 4 patients received basiliximab (20 mg on days 0 and 4) and methylprednisolone (1000 mg). The remaining recipients were treated with antithymocyte globulin (Thymogam 250 mg) according to protocol. Anti-A/B antibody levels were measured before rituximab administration, prior to surgery, and for 7 days postoperatively. Immunosuppressive therapy was initiated two weeks before transplantation and included tacrolimus at a starting dose of 4 mg/day (adjusted postoperatively to maintain target blood levels of 8–10 ng/mL) and mycophenolate mofetil starting at 1000 mg/day with escalation to 2000 mg/day. Plasmapheresis/plasma exchange sessions (3–5 procedures) were performed every other day until a target anti-A/B antibody titer of 1:4 was achieved.

The final preoperative preparation included intravenous immunoglobulin administration. The desensitization protocol (rituximab + plasmapheresis/plasma exchange + multiple doses of immunoglobulin) proved effective in most cases. In one patient with persistent anti-A/B antibody titer of 1:16 despite multiple desensitization cycles, immunoadsorption using ADSOPAK columns was performed. Initial graft function was satisfactory in most cases, characterized by high urine output (up to 4 liters per day) and a decrease in serum creatinine to below 150 μmol/L within 24 hours. Two recipients required several sessions of hemodialysis after transplantation. During the first three weeks postoperatively, all recipients demonstrated a reduction in agglutinin titers to 1:2 and below. Among non-immunological complications, three recipients developed lymphorrhea presenting as serous fluid leakage, which was successfully managed with local hormonal therapy.

Conclusion: The study demonstrates that careful preoperative desensitization and an individualized approach to each patient lead to favorable outcomes in ABO-incompatible kidney transplantation.

09

The Relationship between Infectious Parameters and the Development of Acute Kidney Injury in Adult Renal Transplant Patients Presenting to the Emergency Department with Diarrhea

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Background: Renal transplant recipients are highly susceptible to infections and acute kidney injury (AKI) due to lifelong immunosuppressive therapy. Diarrhea is a common cause of emergency department (ED) admission in this population and may contribute to graft dysfunction. However, the relationship between infectious parameters and AKI development in this setting remains insufficiently defined.

Objective: To investigate the association between infectious and inflammatory parameters and the development of AKI in adult renal transplant recipients presenting to the ED with diarrhea, and to evaluate short-term clinical outcomes.

Methods: This retrospective, single-center study included adult (≥18 years) renal transplant recipients who presented to the emergency department between January 2021 and December 2025. Patients were divided into two groups: those presenting with diarrhea (n=159) and a control group without diarrhea (n=63). Demographic, clinical, and laboratory data—including creatinine, estimated glomerular filtration rate (eGFR), C-reactive protein (CRP), leukocyte count, neutrophil count, lymphocyte count, and neutrophil-to-lymphocyte ratio (NLR)—were analyzed. AKI was defined according to KDIGO criteria. Statistical analyses included non-parametric tests and receiver operating characteristic (ROC) curve analysis.

Results: A total of 222 patients were included. AKI developed in 32.1% of patients in the diarrhea group, whereas no cases were observed in the control group

($p<0.001$). Patients with AKI had significantly higher levels of CRP, leukocytes, neutrophils, and NLR, and lower eGFR values ($p<0.05$). ROC analysis showed moderate predictive performance for creatinine (AUC=0.700) and limited performance for inflammatory markers. Stool PCR was positive in approximately half of tested patients, with cytomegalovirus and norovirus being the most frequently detected pathogens; however, no significant association was found between PCR positivity and AKI development ($p=0.811$). Hospitalization rates and length of stay were not significantly different between patients with and without AKI.

Conclusion: AKI is a common complication among renal transplant recipients presenting with diarrhea to the emergency department. Inflammatory parameters such as CRP, leukocyte count, neutrophil count, and NLR are significantly associated with AKI development, suggesting a role of systemic inflammation in graft dysfunction. Early recognition of high-risk patients and prompt management of dehydration and infection may improve clinical outcomes and preserve graft function.

Oral

O10

Kidney Transplantation in Children

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Kidney transplantation is the gold standard treatment for children with end-stage renal failure and offers significant advantages in survival, growth, and neurocognitive development compared to dialysis. Despite significant advances in this field, maintaining long-term graft survival remains a major challenge, influenced by immunological, clinical, and behavioral factors specific to pediatric patients.

This presentation provides a comprehensive overview of current concepts in pediatric kidney transplantation, focusing on key determinants of both early and long-term success. Topics include optimal timing of transplantation, with emphasis on the role of preemptive transplantation, donor selection strategies, and the unique immunological profile of pediatric recipients. While preemptive transplantation has been associated with reduced exposure to dialysis-related morbidity, its long-term benefit in the context of contemporary immunosuppressive protocols and living donor transplantation remains an area of ongoing investigation

A major focus is the balance between preventing rejection and minimizing treatment-related complications. Pediatric recipients are at increased risk of acute rejection due to heightened immune responsiveness, yet prolonged immunosuppression exposes them to infections, malignancy, and metabolic complications. Emerging strategies, including steroid minimization and individualized immunosuppressive approaches, aim to optimize this balance and improve long-term outcomes.

In addition to immunological challenges, non-adherence—particularly during adolescence—remains a critical determinant of graft survival. This vulnerable period is associated with an increased risk of graft dysfunction and loss, underscoring the importance of structured transition programs and multidisciplinary care models that integrate medical, psychological, and social support.

Our center's 51-year experience, encompassing 3,694 kidney transplants including 440 pediatric recipients, provides valuable real-world insights into the evolution of pediatric transplantation. Over time, we have observed significant improvements in early graft outcomes, largely driven by advances in surgical techniques, donor selection, and immunosuppressive management. However, our long-term data also highlight persistent challenges, particularly related to chronic allograft injury and adherence.

Infectious complications such as BK virus infection, along with cardiovascular and metabolic risks, continue to influence long-term outcomes, necessitating vigilant monitoring and timely intervention.

In conclusion, while pediatric kidney transplantation has achieved remarkable progress, ongoing efforts are needed to improve long-term graft survival and patient well-being. Future directions should focus on individualized immunosuppression, strategies to enhance adherence, and structured transition programs to ensure continuity of care into adulthood. Top of Form

O11

Immediate Results of Kidney Transplantation from Living Related Donors in Children

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Introduction: Kidney transplantation (KT) from a living related donor (LRD) in children is the only effective alternative treatment for end-stage chronic kidney disease (CKD), freeing patients from costly, prolonged, and physiologically burdensome dialysis procedures. According to international renal registry data, the number of pediatric patients with ESRD is increasing. Currently, renal replacement therapy (RRT), including maintenance hemodialysis and kidney transplantation, significantly improves prognosis in patients with uremia.

Objective: To evaluate surgical activity, management strategies, and postoperative outcomes in patients who underwent kidney transplantation from living related donors.

Materials and Methods: From November 2017 to January 2025, 55 kidney transplants from living related donors were performed in children at the Departments of Vascular Surgery and Kidney Transplantation, as well as Kidney Transplantation and Rehabilitation at the Republican Specialized Scientific and Practical Medical Center of Surgery named after Academician V. Vakhidov. This accounts for approximately 5% of all kidney transplants performed at the center during this period. After nephrectomy, kidney perfusion with a preservation solution was initiated immediately. The primary warm ischemia time did not exceed 1 minute. Custodiol solution was used, and occasionally Ringer's lactate at a temperature of 4–6°C, in a volume of 1 liter. Access to the recipient's retroperitoneal space was performed via a pararectal incision with division of the Spigelian line. For arterial anastomosis, the common iliac artery was most commonly used, less frequently the external iliac artery, using an end-to-side technique. Venous anastomosis

(end-to-side) was formed with the external iliac vein, extending to the common iliac vein. Cold ischemia time was 10 ± 0.9 minutes. Secondary warm ischemia time was 35 ± 0.7 minutes. Induction immunosuppression included basiliximab at a dose of 10 mg/kg on days 0 and 4 post-transplant in patients weighing less than 35 kg, and 20 mg/kg in patients weighing more than 35 kg, along with methylprednisolone at a dose of 300 mg/m² body surface area. A ureteroneocystostomy was performed using the Lich technique with placement of a 4F "double-J" ureteral stent. In the postoperative period, all patients received triple maintenance immunosuppressive therapy (tacrolimus, mycophenolic acid, methylprednisolone).

Results: The incidence of kidney graft rejection during the follow-up period was 7.27% (4 cases). Rejection rates were: 1.8% within the first year; 3.6% within three years; 7.2% within five years. Treatment of cellular rejection included pulse therapy with methylprednisolone at a dose of 400 mg/m² once daily for three days. In cases of steroid-resistant rejection, antithymocyte antibodies were administered at 2 mg/kg/day for 5 days. For antibody-mediated rejection, rituximab (375 mg/m²), intravenous immunoglobulin (total dose 2 g/kg over 3 days), and 3–5 sessions of therapeutic plasmapheresis were used. In 98% of patients, clinical manifestations of chronic kidney failure resolved in the early postoperative period. Plasma creatinine levels (decreasing to ≤120 μmol/L) normalized on average by day 4.2 ± 0.9. At 1 month post-transplant, creatinine levels were 0.1 ± 0.02 mmol/L, and glomerular filtration rate at day 5 post-transplant was 85 ± 5 mL/min.

Oral

O12

Heart Transplantation for Adult and Pediatric Patients

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Heart transplantation is the gold-standard surgical treatment for patients with end-stage heart failure who remain symptomatic despite optimal medical treatment. It has been a valid for children who suffer congenital heart defects and cardiomyopathies as well as adult patients. Durable mechanical circulatory support systems has been an alternative for heart failure with evolving technologies and improving outcome, yet their main indication is still as a bridge to transplantation.

Heart transplantation programs require involvement of a number of different disciplines for patient selection, donor management, surgical procedure, early postoperative care and late follow up. This whole process is controlled by legal regulations and national organ sharing systems under the authority of healtcare systems.

Heart transplantation program was initiated at Başkent University in 2003 and currently transplantation practice is carried in two hospitals in Ankara and İstanbul. Since 2003, 156 heart transplantations were done in Ankara hospital, of which one third were done in pediatric patinets younger then 18 years. Technical pitfalls and results will be discussed with current status of national transplant programme.

O13

Pediatric Kidney Disease and Renal Replacement Treatment in Kyrgyzstan in 2021–2025

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Background: Pediatric nephrology care in Kyrgyzstan is increasingly shaped by severe glomerular disease, progression to kidney failure, and limited access to kidney transplantation.

Aim: To describe the structure of kidney diseases in hospitalized children in 2021–2025, with emphasis on CKD G5, dialysis dependence, and pediatric kidney transplantation.

Methods: A retrospective descriptive analysis was performed using annual reports from the nephrology department of the National Center for Maternal and Child Health for 2021–2025 and national nephrology service data for 2025. Pediatric inpatient disease structure was analyzed separately from national adult service indicators.

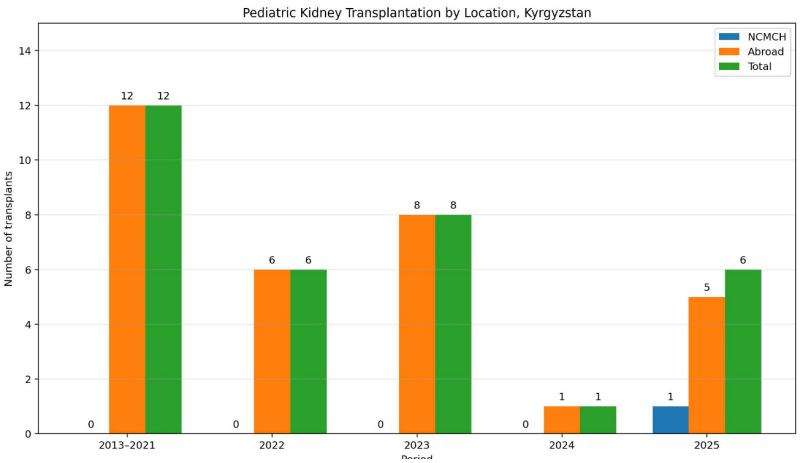
Results: The pediatric inpatient spectrum was dominated by glomerular diseases throughout the study period, accounting for 78.6% of admissions in 2021, 78.5% in 2022, 73.7% in 2023, 74.0% in 2024, and 80.8% in 2025. The leading diagnoses were nephrotic syndrome and nephritic syndrome. CAKUT- and UTI-associated pathology represented a secondary cluster, ranging from 6.2% to 13.8%, while AKI/HUS/TMA accounted for 2.5% to 5.6%. Hereditary nephropathies and tubulopathies increased to 3.2% in 2025, in parallel with the introduction of genetic testing. The proportion of children admitted with CKD G5 on maintenance hemodialysis increased from 1.8% in 2021 to 6.5% in 2025. In 2025, emergency admissions increased because of AKI, CKD G5, and rapidly progressive glomerulonephritis, indicating a shift toward later and more severe presentation. National nephrology data additionally show limited predialysis nephrology capacity, delayed referral, missed CKD cases, and insufficient regional access to specialized care.

According to additional center data provided by the authors, CKD G5 in most children is first established at late presentation, already at the stage of kidney replacement therapy requirement. The mean time from initiation of maintenance dialysis to kidney transplantation is 12±4 months. Approximately 40% of children, typically aged 15±3 years, transition to adult care without transplantation and remain on chronic dialysis because no related living donor is available.

Pediatric kidney transplantation remains largely dependent on treatment abroad. Among 32 pediatric transplants performed in 2013–2025, only 1 was carried out locally in 2025; the mean age at transplantation was 10±4.9 years, and 3 children returned to hemodialysis. For comparison, the national follow-up population living with a kidney transplant reached 738 by 2025, whereas dialysis-based kidney replacement therapy included 4164 patients by October 1, 2025; among 25 patients on peritoneal dialysis, 21 were children.

Conclusions: In Kyrgyzstan, pediatric kidney disease is characterized by a persistent predominance of severe glomerular pathology and an increasing share of children reaching CKD G5. A substantial proportion present late, with first recognition of kidney failure occurring only when dialysis is already required. Pediatric kidney transplantation remains structurally limited by dependence on foreign centers, prolonged dialysis exposure, and loss of transplant opportunity during transition to adult care. These findings support the need for earlier CKD detection, stronger predialysis referral pathways, expansion of pediatric dialysis programs, and development of a sustainable in-country pediatric kidney transplant pathway.

Keywords: Children; chronic kidney disease; CKD G5; kidney replacement therapy; maintenance hemodialysis; peritoneal dialysis; glomerular disease; hereditary nephropathy; kidney transplantation; transition to adult care; Kyrgyzstan



Oral

O14

Comparison of Pregnancy Outcomes in Recipients with Kidney Transplantation

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The average age of the patients was 33.8 years. In our center, 1316 patients underwent kidney transplantation between 2010 and 2024. The main cause of the terminal stage of chronic renal failure in recipients was chronic glomerulonephritis (91.4%). Of these, about 167 (22%) were women. Women of reproductive age constituted 87.4%. Pregnant women with kidney transplantation experienced some complications during gestation. Two of them developed gestational pyelonephritis. The next complication was premature birth and the birth of low-birth-weight children. Preterm delivery in our study was observed in 1 recipient of a kidney transplant. The main indications for early surgical delivery were hypertensive complications and edema syndrome. In all pregnant recipients at later stages of pregnancy, proteinuria was observed, increasing towards the end of gestation. Arterial hypertension was observed in 5 women with kidney transplantation even before pregnancy. Among other pregnancy complications, anemia was observed in the recipients. To prevent teratogenic effects, the doses of immunosuppressive drugs used during pregnancy were adjusted, taking into account minimal manifestations of their adverse reactions while maintaining an adequate level of immunosuppression and the stability of the kidney transplant function.

Conclusion: Based on our experience, one of the most important criteria contributing to a favorable course of pregnancy in women with kidney transplantation should be considered the period after transplantation exceeding one year. Indicators of stable kidney transplant function can be considered to be creatinine levels up to 150 μmol/l, urea up to 12 mmol/l, proteinuria up to 0.5 g/day, glomerular filtration rate (GFR) 40 ml/min - 60 ml/min. A serious criterion for the stable functioning of any transplant is the absence of arterial hypertension or a controlled adequate blood pressure (BP) level - up to 140/90 mm Hg. We also examined the psycho-emotional state of women who gave birth with chronic renal failure compared to pregnant women after kidney transplantation. Chronic kidney failure affected various body systems, including the cardiovascular system, metabolism, and hormonal balance. These possible consequences caused a strong fear among women who worried that their condition could affect the child's development or lead to its loss. Women with CKD often experienced uncertainty about their condition, as the disease could progress, and pregnancy prognosis could vary depending on the stage of the disease. Fear of an uncertain outcome of pregnancy, especially if the woman does not receive complete information about possible risks, significantly increased the feeling of anxiety and worry. Opposite, the recipients of the kidney transplant were under close observation and medical support. And they followed practically all the conditions and recommendations of the doctors, which led to a successful outcome. In this regard, most women who underwent kidney transplantation had normal pregnancies and gave birth to healthy children.

O15

Infection Risk Score in Renal Transplant Recipients (RT–ERS)

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Background: Renal transplant recipients are at increased risk of infectious complications due to chronic immunosuppression. Diarrhea is a frequent cause of emergency department (ED) visits in this population and may lead to volume depletion and acute kidney injury (AKI), potentially compromising graft function.

Objective: To evaluate the relationship between infectious and inflammatory parameters and the development of AKI in adult renal transplant recipients presenting to the emergency department with diarrhea.

Methods: This retrospective study included adult renal transplant recipients who presented to the emergency department between January 2021 and December 2025. Patients presenting with diarrhea were analyzed in terms of demographic characteristics, laboratory findings, and clinical outcomes. AKI was defined according to KDIGO criteria. Infectious and inflammatory markers, including C-reactive protein (CRP), leukocyte count, neutrophil count, lymphocyte count, and neutrophil-to-lymphocyte ratio (NLR), were evaluated. Statistical analyses were performed to determine the association between these parameters and AKI development.

Results: AKI developed in a significant proportion of renal transplant recipients presenting with diarrhea. Patients who developed AKI had significantly higher levels of inflammatory markers, including CRP, leukocyte count, neutrophil count, and NLR, and lower estimated glomerular filtration rate (eGFR) values compared to those without AKI ($p<0.05$). Microbiological analysis revealed that infectious agents were identified in approximately half of the patients, with viral pathogens such as cytomegalovirus and norovirus being the most common. However, the presence of a detected pathogen was not significantly associated with AKI development.

Conclusion: AKI is a common and clinically important complication in renal transplant recipients presenting with diarrhea to the emergency department. Elevated inflammatory markers are associated with increased risk of AKI, suggesting that systemic inflammation plays a key role in its pathogenesis. Early identification and management of high-risk patients may help prevent graft dysfunction and improve clinical outcomes.

O16

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Oral

O17

Comparative Analysis of Outcomes in Adult Living Donor and Deceased Donor Liver Transplantation: A Systematic Review

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Liver transplantation (LT) is the treatment of choice for end-stage liver disease and selected malignant liver tumors. Since its introduction in 1963, the demand for liver transplantation has steadily increased, resulting in a significant shortage of donor organs, prolonged waiting lists, and increased patient risk. To address the gap between supply and demand, alternative strategies have been implemented, including donation after brain death (both with preserved and non-preserved cardiac activity) (DDLT) and living donor liver transplantation (LDLT).

The outcomes of LDLT and DDLT have been extensively studied; however, the results remain inconsistent. Some meta-analyses demonstrate a survival advantage for LDLT, while others suggest comparable outcomes between the two approaches. Moreover, comprehensive comparisons encompassing both survival and post-transplant complications remain relatively limited.

In this presentation, we focus on a meta-analysis of studies specifically evaluating key clinical outcomes: overall patient survival, graft survival, retransplantation rates, and the incidence of infectious and biliary complications. This systematic review and meta-analysis provide updated evidence comparing LDLT and DDLT outcomes in adult patients, based on data from 17 studies involving more than 22,000 recipients. The findings demonstrate that LDLT is associated with statistically significant improvements in 1-year and 5-year patient survival, as well as 5-year graft survival.

In contrast, no significant differences were observed between the two groups in terms of 1-year graft survival, 3-year patient survival, biliary complications (including strictures and leaks), hepatic artery thrombosis, infection rates, or retransplantation rates. However, the overall quality of evidence is low, and these results should be interpreted with caution, as they are likely influenced by substantial baseline differences between study cohorts.

The meta-analysis suggests that shorter cold ischemia time in LDLT is a critical determinant of improved outcomes. Unlike DDLT grafts, which may undergo prolonged periods of cold storage, LDLT grafts are typically implanted within 1–2 hours after procurement, thereby minimizing ischemia-reperfusion injury. This is associated with improved graft preservation and long-term function. Prolonged cold ischemia is a well-established cause of early graft dysfunction and is negatively correlated with post-transplant regeneration and survival.

Furthermore, graft quality in LDLT is generally superior due to rigorous donor selection. Living donors undergo extensive evaluation, resulting in grafts with minimal steatosis and optimal functional liver mass. This contrasts with DDLT grafts, which may originate from extended criteria donors with comorbidities that can impair initial graft function and affect long-term outcomes.

Finally, the elective nature of LDLT allows transplantation in recipients with lower MELD scores under optimized clinical conditions, potentially avoiding severe multi-organ dysfunction often associated with prolonged waiting times in DDLT. Together, these factors contribute to reduced graft loss, improved graft function, and overall better recipient condition, which may explain the differences in survival outcomes observed in this meta-analysis.

LDLT remains a valuable modality for patients requiring liver transplantation and represents an excellent alternative to DDLT. Its use should be more strongly considered, particularly in regions where deceased donor availability is extremely limited.

O18

Development of Liver Transplantation at the A.N. Syzganov's National Scientific Center of Surgery

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Background: Liver transplantation (LT) is a radical treatment method for recipients with end-stage liver disease. The first LT in Kazakhstan was performed in December 2011. Our hospital has more than 10 years of experience in LT by February 2026. This study shows the results after LT at leading clinic in Kazakhstan.

Methods: From December 2011 to February 2026, a total of 352 liver transplantations in adults and children were performed in our center. Thirty-four (9,6%) LT were performed from deceased donors and 318 (90,4%) were from living donors. Pediatric LT from a living donor was performed in 52 cases (14,8%). The following graft types were used: right lobe (RL) — 246 (69.9%), left lobe (LL) — 31 (8,9%), posterior lateral sector — 1 (0.2%), dual graft — 1 (0.2%), left lateral section (LLS) — 41 (11.7%), whole liver — 31 (8,9%), and split transplantation — 1 (0.2%). Indications for LT were cirrhosis in the outcome: hepatitis C 41, hepatitis B 31, hepatitis B with delta agent 151, primary biliary cirrhosis 43, primary sclerosing cholangitis 6, cryptogenic cirrhosis 11, alimentary-toxic hepatitis 3, Budd-Chiari 2, myofibroblastic tumor 1, steatohepatitis 2, Wilson-Konovalov 1, biliary atresia 28, secondary biliary cirrhosis 2, autoimmune hepatitis 28, chronic rejection 1, hepatoblastoma 1. Clinical results were retrospectively analyzed.

Results: The overall 1- , 5 - and 10-year survival rate after LT were 85,5%, 78,2% and 75% respectively. Biliary complications after LT were observed in 63 (17.8%), vascular complications in 11 (3.9%), bleeding in 25 (7.1%), rejection crisis in 13 cases (3.7%).

Conclusions: LDLT in Kazakhstan and in our hospital is actively performed with good results. The main problem at present is the need to develop organ transplantation from deceased donors.

O19

Beyond Milan: A Biology-Driven and Living Donor- Focused Evolution of Liver Transplantation for Hepatocellular Carcinoma

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Hepatocellular carcinoma (HCC) remains a major global health burden and a leading indication for liver transplantation (LT), which uniquely offers oncologic cure while simultaneously treating the underlying cirrhotic milieu. The introduction of the Milan criteria established LT as a standard of care for carefully selected patients, achieving excellent long-term survival and low recurrence rates. However, the growing disparity between organ demand and supply has driven the evolution of expanded selection frameworks, including the UCSF criteria, as well as more sophisticated models like Metroticket 2.0 incorporating tumor burden, serum alpha-fetoprotein (AFP), and dynamic tumor behavior.

Contemporary practice reflects a paradigm shift from rigid morphologic thresholds toward a biology-oriented approach. Tumor aggressiveness, as reflected by AFP kinetics, radiologic features, and response to locoregional therapies, has emerged as a critical determinant of transplant candidacy. Downstaging protocols have become an essential component of modern management, allowing selected patients beyond conventional criteria to achieve eligibility while simultaneously serving as an in vivo assessment of tumor biology. Successful downstaging is associated with post-transplant outcomes comparable to those observed in patients initially within standard criteria.

Bridging therapies—including transarterial chemoembolization (TACE), radiofrequency ablation (RFA), and stereotactic body radiotherapy (SBRT)—play a pivotal role in maintaining patients within acceptable tumor limits during the waiting period and mitigating dropout risk. Importantly, treatment response informs prioritization strategies within allocation systems that

increasingly seek to balance equity and utility in the context of limited deceased donor organs.

In this setting, living donor liver transplantation (LDLT) has assumed growing importance as a means of circumventing prolonged waiting times and reducing waitlist mortality. By enabling timely transplantation, LDLT minimizes the risk of tumor progression and allows transplantation at a more favorable oncologic stage. Furthermore, LDLT facilitates broader application of individualized selection criteria, particularly in regions with organ scarcity, while maintaining acceptable donor safety and recipient outcomes. Its integration into HCC management algorithms represents a critical advancement in expanding access without compromising oncologic integrity.

Post-transplant management strategies have also evolved, with increasing emphasis on tailored immunosuppression. Minimization protocols and the selective use of mTOR inhibitors have demonstrated potential antineoplastic effects, contributing to reduced recurrence rates in high-risk populations. Concurrently, emerging technologies—including radiomics, molecular profiling, and liquid biopsy—offer promising tools for refining candidate selection and predicting recurrence.

The modern approach to LT for HCC is characterized by a multidisciplinary, precision-based framework that integrates tumor biology, therapeutic response, and innovative allocation strategies. Within this evolving landscape, LDLT plays a central role in addressing organ shortage and optimizing timing of transplantation. Future efforts should focus on harmonizing expanded selection criteria with robust biomarkers to further improve long-term outcomes and ensure equitable access to this life-saving therapy.

O20

Biliary Complications after Living Donor Liver Transplantation Depending on the Anatomy Structure of Bile Duct According To the Modified Huang Classification

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Background: Biliary complications are the most common postoperative adverse events after living donor liver transplantation, largely determined by variations in biliary anatomy.

Materials and Methods: A retrospective analysis of 208 adult living donor liver transplantation recipients (2011–2024). Clinical, perioperative, and anatomical variables, including Modified Huang bile duct types, were evaluated. Early (≤3 months) and late (>3 months) complications were compared.

Results: Biliary complications occurred in 24.5% of recipients. Type C anatomy showed the highest risk (56.5%, p = 0.0140). Prolonged cold ischemia time was strongly associated with biliary complications (p = 0.0001). Early biliary complications were mainly bile leaks, while late biliary complications were predominantly strictures requiring more interventions. Overall survival was 91.8% at 1 year and 72.1% at 10 years.

Conclusion: Biliary complications after living donor liver transplantation are primarily determined by biliary anatomical variation. Type C ducts significantly increase the risk of postoperative complications. Early identification of high-risk anatomy and individualized surgical planning may reduce biliary morbidity.

Keywords: living donor liver transplantation; biliary complications; bile duct anatomy; Huang classification; bile leak; biliary stricture.

O21

Results of the First Orthotopic Living Donor Liver Transplantation and Liver Autotransplantation in The Kyrgyz Republic

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Liver transplantation is the only radical treatment for cirrhosis, fibrotic liver disease, and focal liver lesions. The aim of this study was to present the first experience of orthotopic living donor liver transplantation and liver autotransplantation in the Kyrgyz Republic. The study included two patients. The first patient with terminal liver cirrhosis due to hepatitis B and D underwent orthotopic living donor liver transplantation in 2014. Intraoperatively, portal vein thrombosis was detected and vascular reconstruction was performed using a vascular graft. The patient developed postoperative liver failure and died on postoperative day 21. The second patient with advanced hepatic alveococcosis and invasion into the inferior vena cava underwent liver autotransplantation with resection of the inferior vena cava and vascular reconstruction in 2019. The postoperative period was uneventful and the patient was discharged on postoperative day 18. Orthotopic living donor liver transplantation and liver autotransplantation are complex surgical procedures that may be the only life-saving treatment for patients with terminal liver disease and advanced hepatic alveococcosis. These procedures should be performed in highly specialized centers.

O22

Right Lobe Living Donor Liver Transplantation: Is Middle Hepatic Vein Reconstruction Optional or Essential?

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Background: Right lobe living donor liver transplantation (LDLT) has emerged as a critical solution for end-stage liver disease, particularly in regions with limited access to deceased donor organs. However, optimal venous outflow remains a fundamental determinant of graft function and early postoperative outcomes. In right lobe grafts, exclusion of the middle hepatic vein (MHV) frequently results in inadequate drainage of the anterior segments, particularly segments V and VIII. This can lead to venous congestion, impaired sinusoidal perfusion, hepatocellular injury, and ultimately early graft dysfunction. Despite these well-recognized physiological consequences, the necessity of routine MHV tributary reconstruction remains controversial and inconsistently applied across transplant centers.

Aim: This study aims to critically evaluate whether reconstruction of MHV tributaries should be considered an optional technical modification or an essential component of right lobe LDLT, by assessing its impact on early graft function and postoperative outcomes.

Methods: A retrospective cohort analysis was conducted including patients who underwent right lobe LDLT. Patients were stratified into two groups based on surgical technique: those who underwent MHV tributary reconstruction and those in whom reconstruction was omitted. Reconstruction was selectively performed using interposition grafts for major tributaries, primarily the V5 and V8 veins, based on intraoperative assessment of venous drainage patterns. Primary endpoints included early graft function, assessed by postoperative liver enzyme trends and biochemical markers of hepatocellular injury, as well as the incidence of biliary complications and overall postoperative morbidity. Secondary observations included intraoperative complexity and vascular complication rates.

Results: MHV tributary reconstruction was associated

with significantly improved early graft function. Patients in the reconstruction group demonstrated more rapid normalization of transaminases and reduced levels of biochemical markers indicative of hepatocellular injury, suggesting more effective parenchymal perfusion. In contrast, omission of reconstruction was associated with a higher incidence of venous congestion within the anterior segments, which correlated with delayed functional recovery. Furthermore, patients without MHV reconstruction exhibited a higher rate of biliary complications, likely reflecting the sensitivity of biliary epithelium to microcirculatory disturbances. Importantly, reconstruction did not result in a statistically significant increase in vascular complications, nor did it impose a clinically relevant increase in operative time or technical burden.

Conclusion: The findings of this study demonstrate that omission of MHV tributary reconstruction in right lobe LDLT is associated with inferior early graft outcomes and potentially avoidable complications. These results strongly suggest that MHV reconstruction should not be regarded as an optional adjunct but rather as an essential, physiology-driven component of graft implantation when significant tributaries are present. Adoption of a more standardized approach to venous reconstruction may improve graft performance, reduce postoperative morbidity, and ultimately enhance patient outcomes. This supports a paradigm shift toward routine and individualized venous outflow optimization in right lobe living donor liver transplantation.

O23

Determination of Brain Death

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Brain death, defined as the irreversible cessation of all functions of the brain, including the brainstem, constitutes the legal determination of death based on neurological criteria. A rigorous and standardized diagnostic approach is essential to ensure accuracy, avoid false-positive determination, and optimize organ donation processes.

The diagnosis requires documentation of a catastrophic and irreversible brain injury of known etiology, alongside exclusion of confounding and reversible conditions, including hypothermia, severe metabolic or endocrine derangements, and residual effects of central nervous system depressant or neuromuscular blocking agents. Prerequisites also include hemodynamic stability and adequate oxygenation.

Clinical examination remains the gold standard and must demonstrate deep unresponsive coma, absence of all brainstem reflexes, and lack of spontaneous respiratory drive.

Brainstem areflexia is confirmed by fixed, non-reactive pupils, absent corneal reflexes, absence of oculocephalic and vestibulo-ocular responses, and absence of gag and cough reflexes. The apnea test is a critical component and requires demonstration of absent respiratory effort despite adequate stimulation, defined by a $PaCO_2 \geq 60$ mmHg or an increase of ≥ 20 mmHg from baseline under appropriate preoxygenation and monitoring conditions.

Ancillary investigations may be indicated when elements of the clinical assessment or apnea testing cannot be completed or are unreliable. These include electroencephalography, transcranial Doppler ultrasonography, radionuclide cerebral perfusion imaging, computed tomography angiography and catheter-based cerebral angiography. While supportive, these modalities do not substitute for clinical criteria.

Adherence to national legislation and institutional protocols is mandatory to ensure diagnostic validity and medico-legal reliability. Early and definitive determination of brain death enables timely donor management and may contribute to narrowing the gap between organ supply and demand.

O24

Organ Donation and Transplantation: Legal Aspects of the Activity

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Objective: Kidney transplantation remains the optimal therapeutic modality for end-stage renal disease. This study evaluates the contemporary status of kidney transplantation in the Republic of Uzbekistan, focusing on legislative evolution, national transplant activity, immunosuppressive protocols, and long-term clinical outcomes.

Materials and Methods: A retrospective analysis was conducted using data from the national transplant registry of the Republic of Uzbekistan. Key parameters included legislative milestones, transplant volume, recipient follow-up, and immunosuppressive therapy characteristics. The historical development of transplantation was stratified into five distinct stages based on changes in the national regulatory framework.

Results: The development of transplantation is delineated into five stages: Stage I (1972–1991), initiated by the 1970 legal regulations on organ and tissue transplantation, with the first kidney transplantation performed on September 14, 1972; Stage II (1991–1998), marked by a complete cessation of activity due to legislative prohibition; Stage III (1998–2017), during which 48 living-related donor transplantations were conducted under a special Ministry of Health directive; Stage IV (2017–2022), following Cabinet of Ministers Resolution No. 859 (October 17, 2017), during which 849 kidney and 22 liver transplantations were performed, all from living related donors; and Stage V (beginning May 11, 2022), initiated by the Law "On Transplantation of Human Organs and (or) Tissues," which established the legal basis for both living and deceased donor transplantation.

In 2017, 512 kidney transplant recipients underwent transplantation abroad. Between 2017 and 2025, 1,315 kidney transplantations were performed domestically. As of 2025, the national registry reports a total of 2,683 kidney transplant recipients.

All recipients received government-funded standard triple immunosuppressive therapy. Tacrolimus was prescribed in 98.8% of recipients, while cyclosporine was used in 1.2%. Mycophenolate mofetil was administered to 80.8% of recipients, compared with 19.2% receiving mycophenolic acid. The mean daily tacrolimus dose was 5.35 mg, with a corresponding mean trough concentration of 6.73 ng/mL. The mean daily cyclosporine dose was 251.7 mg. Mean daily doses of mycophenolate mofetil and mycophenolic acid were 1532.2 mg and 1049.6 mg, respectively.

Recipient survival rates at 1 and 5 years were 97.3% and 95.7%, respectively. Kidney graft survival rates at 1 and 5 years were 98.8% and 97.9%, respectively.

Conclusions: Kidney transplantation in Uzbekistan has demonstrated substantial clinical and legislative progress in recent years. The observed favorable recipient and graft survival rates reflect the high efficacy of the national transplantation program. The exclusive use of living related donors—driven by the optin (presumed dissent) legal framework for deceased donation—remains a key factor contributing to excellent short- and midterm outcomes, as it enables optimized donor selection and enhanced HLA compatibility.

Oral

O25

Ethical and Legal Aspects of Transplantation in Kazakhstan

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Introduction: The evolution of transplantology in Kazakhstan is inextricably linked to the development of moral principles governing the attitudes of medical professionals and society toward organ donation. While grounded in humanism and the imperative to save lives, modern clinical advancements simultaneously present complex ethical and legal dilemmas for practitioners.

Core Challenges: A primary barrier remains deep-seated public distrust. Significant segments of the population view deceased donation with apprehension due to religious beliefs, information deficits, and fears of "black market transplantology."

Furthermore, the registration of ante-mortem (living) intent remains problematic. Although the Code "On the Health of the People and the Healthcare System of the Republic of Kazakhstan" (July 7, 2020) establishes a legal framework, public awareness of refusal procedures is limited. Consequently, physicians often abstain from organ procurement—even when legal grounds exist—to avoid conflict with the decedent's family.

While the eGov.kz portal allows citizens over 18 to electronically register their intent, medical coordinators traditionally seek "requested consent" from next-of-kin. In states of acute grief, relatives frequently decline. Additionally, while the law mandates that transplantation be gratuitous and voluntary between relatives, clandestine schemes continue to undermine systemic integrity.

Proposed Solutions: Improving this landscape requires a refined regulatory framework. It is essential to strictly regulate the National Waiting List, the practical execution of the presumption of consent, and standardized transplantation protocols.

Information and educational outreach are equally vital. Cultivating objective public opinion can reduce distrust, expand the donor pool, and diminish the demand for illicit operations. Furthermore, oversight must be strengthened through rigorous procurement protocols, a transparent monitoring system, and the full digitalization of the donation process.

Ethical Principles: Professional ethics in this field are anchored in two key principles. First, the "non-maleficence" rule: assistance to a recipient must not cause irreversible harm to a living donor. Second, the principle of proportionality: transplantation is admissible only when the expected clinical outcome justifies the inherent risks. Decisions are predicated on a strict balance of benefit and harm.

The Role of Society: Currently, society is not fully prepared to embrace the concepts of organ donation. Mass media often disseminate sensationalist or unverified reports, fostering negative perceptions. Paradoxically, transplantation remains the sole life-saving intervention for many patients in critical condition. It represents a high-risk but indispensable frontier of modern medicine.

Conclusion: Developing transplantology in Kazakhstan necessitates a comprehensive strategy. Key steps include popularizing organ donation through NGO cooperation and social marketing campaigns. Systematizing management, increasing transparency, and pursuing integration with international networks like Eurotransplant will elevate the efficiency and quality of national transplant assistance.

Keywords: Transplantology, Organ donation, Presumption of consent, Medical ethics, Bioethics, Healthcare in Kazakhstan, Public awareness, Medical law.

O26

Experience of a Training Program in Turkey on Anesthetic Management of Liver and Kidney Transplantation and its Practical Application in the Kyrgyz Republic

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Introduction: Liver and kidney transplantation are among the most complex surgical procedures, requiring highly skilled anesthetic management. International training programs provide opportunities to exchange experience and implement modern patient care techniques. In the Kyrgyz Republic, organ transplantation is developing, and the application of acquired skills contributes to improved clinical outcomes.

Aim: To evaluate the experience gained during a training program in Turkey on anesthetic management of liver and kidney transplantation and its practical application in the clinical practice of the Kyrgyz Republic.

Materials and Methods: - The training was conducted in Malatya, Turkey.
- Observations included anesthetic management during liver and kidney transplantation.
- Key areas of focus: patient monitoring, hemodynamic management, infusion therapy, coagulopathy correction, and multidisciplinary team collaboration.
- Acquired skills were subsequently applied during the first organ transplantations performed in the Kyrgyz Republic.

Main Results: - Successful implementation of advanced monitoring and hemodynamic management techniques.
- Optimization of infusion therapy and correction of coagulopathy.
- Improved coordination among anesthesiologists and surgical team members.
- Clinical outcomes were consistent with international standards for transplant patient management.

Discussion: - The training program facilitated the acquisition of modern anesthetic management techniques for complex transplant procedures.
- Practical application of these skills in the Kyrgyz Republic allowed adaptation of international protocols to local conditions.
- Key challenges in implementation were identified, along with possible solutions.

Conclusions: - International training programs are an effective tool for professional development of anesthesiologists.
- Acquired skills can be successfully applied in clinical practice in the Kyrgyz Republic.
- Continued development of anesthetic management for organ transplantation will enhance th

Oral

O27

Anesthesia for Liver and Kidney Transplantation: A Multidisciplinary Perspective

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Solid organ transplantation represents one of the most physiologically complex surgical undertakings in modern medicine, demanding seamless collaboration across surgery, anesthesiology, nephrology, hepatology, intensive care, and nursing. This presentation provides a comprehensive overview of anesthetic management in liver and kidney transplantation, with emphasis on the critical role of the multidisciplinary team at each phase of care.

Preoperative assessment forms the cornerstone of safe transplant anesthesia. In liver transplant candidates, the degree of hepatic dysfunction — quantified by MELD score, Child-Pugh classification, and the presence of portal hypertension — directly shapes anesthetic planning. Renal transplant candidates frequently present with a constellation of comorbidities including cardiovascular disease, anemia, fluid and electrolyte disturbances, and uremic coagulopathy. Thorough preoperative optimization, including frailty assessment, nutritional status, and cardiopulmonary reserve, is essential to stratify risk and guide intraoperative strategy.

Intraoperative management requires dynamic, real-time decision-making. Liver transplantation is divided into three distinct phases — dissection, anhepatic, and neohepatic — each carrying unique hemodynamic, metabolic, and coagulation challenges. Massive blood loss, reperfusion syndrome, and viscoelastic-guided transfusion strategies are central concerns. Kidney transplantation, while comparatively less hemodynamically volatile, demands meticulous fluid management, targeted mean arterial pressure goals to optimize graft perfusion, and careful avoidance of nephrotoxic agents. In both procedures, goal-directed hemodynamic monitoring, advanced vasopressor protocols, and temperature management are integral to outcomes.

Postoperative and ICU care is where multidisciplinary synergy becomes most evident. Early extubation protocols, pain management strategies that account for altered drug metabolism, and vigilant monitoring for primary graft non-function, acute rejection, and infectious complications define this phase. Immunosuppressive regimen initiation, renal replacement therapy decisions, and nutritional support require coordinated input from the entire team.

Complications — including hepatic artery thrombosis, biliary leaks, delayed graft function, hyperkalemia, and post-reperfusion syndrome — are reviewed with practical management algorithms applicable across disciplines.

By integrating current evidence with a team-based framework, this presentation aims to enhance mutual understanding among all members of the transplant team, ultimately improving patient safety and graft survival outcomes.

O28

Launching a Transplant Program at a Regional Center: First Living-Donor Liver Transplantation in Southern Kyrgyzstan

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We report the first living-donor liver transplantation performed in southern Kyrgyzstan. The recipient was a 50-year-old woman with HBV/HDV-related cirrhosis (Child–Pugh B, 9 points; MELD 16), complicated by grade III esophageal varices and a perioperative gastrointestinal bleeding episode. The graft was the right hepatic lobe (780 g, GRWR 1.3), donated by the patient's son. Variant biliary anatomy necessitated a combined duct-to-duct anastomosis. The procedure was performed jointly by teams from Osh State University Medical Center and the Sklifosovsky Institute and lasted 6.5 hours. The early postoperative course was uneventful, with no primary graft dysfunction. On postoperative day 40, an anastomotic bile duct stricture developed (Clavien–Dindo IIIb) and was successfully managed by endoscopic stenting. The case demonstrates the feasibility of establishing a transplant program at a regional center with international methodological support.

Keywords: liver transplantation, living donation, GRWR, MELD, Child–Pugh, Clavien–Dindo, biliary complications, Kyrgyzstan.

Oral

Introduction: Liver transplantation remains the only curative treatment for end-stage liver failure. In most Central Asian countries, it is either confined to capital-city centers or unavailable altogether. Kyrgyzstan is no exception: the southern region centered on Osh had no transplant capacity of any kind until December 2025, despite a traditionally high burden of HBV/HDV-associated cirrhosis. This paper describes the first living-donor liver transplantation performed in this region and analyzes the clinical and organizational decisions that made it possible.

Case Report:

Recipient

A 50-year-old woman with HBV/HDV-related cirrhosis. On admission: Child–Pugh B (9 points), MELD 16, BMI 22 kg/m^2; no ascites or encephalopathy. A significant complicating factor was grade III esophageal varices with a gastrointestinal bleeding episode immediately before the operation.

Laboratory findings indicated moderate hepatocellular insufficiency with a coagulopathic component: total bilirubin 57 μmol/L, direct 20 μmol/L; albumin 34 g/L; INR 1.57; prothrombin index 62.4%; platelets 120 × 10^9/L; fibrinogen 2.12 g/L. HBsAg and Anti-HBc IgG were positive; HBV-DNA was undetectable; HDV-RNA was 6,200 IU/mL, indicating active delta infection.

Donor and Graft

The donor was the recipient's son, aged 25, BMI 24 kg/m^2, with no chronic illness. The graft was the right hepatic lobe (780 g), GRWR 1.3 — within the accepted safe range. Preoperative imaging revealed variant biliary anatomy: two bile ducts with otherwise standard vascular architecture.

Procedure

A joint team from Osh State University Medical Center and the Sklifosovsky Institute, operating time 6.5 hours. The vascular reconstruction was completed without technical incident. Biliary reconstruction required a tailored approach: both ducts were unified into a single duct-to-duct anastomosis. This technique was preferred over hepaticojejunostomy to preserve physiological bile flow and maintain endoscopic access to the anastomotic zone.

Results: The early postoperative course was uneventful with no signs of primary graft dysfunction. Bilirubin declined appropriately and coagulation parameters normalized — a satisfactory outcome given the perioperative variceal bleeding.

On postoperative day 40, the patient developed obstructive jaundice. ERCP confirmed an anastomotic bile duct stricture (Clavien–Dindo IIIb). Endoscopic stenting produced a rapid clinical and biochemical response. It was precisely the preservation of a duct-to-duct anastomosis — rather than a hepaticojejunostomy — that enabled this minimally invasive approach, retrospectively validating the intraoperative decision.

Discussion: Anastomotic strictures are the most common biliary complication of living-donor liver transplantation, reported in 10–40% of cases. Variant biliary anatomy is a recognized predisposing factor. In this case the complication was foreseeable; what mattered was that it proved manageable without reoperation.

From an organizational standpoint, the case illustrates the reproducibility of an outreach mentorship model: the Moscow center contributed not only to the operation itself but to preoperative planning and postoperative management. Success was not the product of a single surgical team but of a system — one with endoscopic capabilities, defined immunosuppression protocols, and multidisciplinary coordination.

Conclusion: The first living-donor liver transplantation in southern Kyrgyzstan was completed successfully. The case supports three conclusions: transplantation is feasible at a regional center with international support; variant biliary anatomy is manageable with appropriate preoperative planning; and the duct-to-duct technique preserves a minimally invasive option for stricture treatment. This experience establishes the precedent needed for further development of a regional transplant program.

O29

Age-Dependent Differences in Pediatric Versus Adult Kidney Transplantation: Impaired VEGF and NO Signaling Weaken Microvascular Integrity and Threaten Renal Graft Survival

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Introduction: Aging is a critical yet often overlooked factor influencing renal allograft outcomes. Experimental studies suggest that aged endothelial cells (EC) exhibit diminished production of nitric oxide (NO) and vascular endothelial growth factor (VEGF), key regulators of vascular integrity. This decline is associated with a reduction in both glomerular capillaries (GC) and peritubular capillaries (PTCs), leading to chronic ischemia. We aim to investigate the impact of aging on GC and PTC density in renal allografts.

Methods: This study included 150 renal transplant recipients, 42 (28%) of whom were pediatric. Pediatric cases were grouped as P1 (donor <40y) and P2 (donor >40y). Among 108 adult recipients, 50 had donors <40 y (A1) and 57 had donors >40 y (A2). GC and PTC densities were assessed by CD31 and HLA-DR staining. VEGF and NO expression in GCs/PTCs, as well as the EC proliferation index (PI), were evaluated using PCNA. Tubular villin and PCNA expression were also examined. Follow-up biopsies were analyzed for interstitial fibrosis (IF) and glomerulosclerosis (GS).

Results: VEGF, NO, and PCNA expression, as well as GC/PTC density, were significantly higher in pediatric vs. adult recipients ($p<0.01$). Among all groups, P1 showed the highest levels, followed by P2, A1, and A2. Tubular PCNA and Villin expression showed a similar trend ($p<0.01$). PTC count correlated negatively with PTCitis, tubular Villin,

proteinuria, IF, and graft loss (p<0.001), but positively with PTC-VEGF and PTC-NO (p<0.001). Likewise, GC loss correlated with GC inflammation, tubular Villin, proteinuria, GS, and graft loss, but positively with GC-VEGF and GC-NO (p<0.001). Ten-year graft survival was 76% (P1), 61% (P2), 50% (A1), and 32% (A2) (p=0.004).

Conclusion: Aging significantly impacts the microvascular integrity of renal allografts and their long-term survival. Pediatric recipients with younger donors (P1) showed the highest VEGF/NO expression, capillary density, and EC proliferation, resulting in better graft outcomes. Conversely, adult recipients with older donors (A2) experienced significant MV loss, increased IF and GS, and the lowest survival rates. These results suggest that age-related declines in angiogenic signaling contribute to capillary rarefaction and graft dysfunction, underscoring the need for targeted strategies to enhance longevity, particularly in older donor-recipient pairs.

Oral

O30

Liver Transplantation in The Kyrgyz Republic: From Initial Success To Systematic Implementation

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Background: Liver transplantation remains the only radical treatment for patients with end-stage liver disease. The Kyrgyz Republic is gradually developing a national living-donor liver transplantation program through specialist training, regulatory framework development, and strengthening technical capacity.

Objective: To evaluate organizational, diagnostic, and surgical aspects of liver transplantation and assess the implementation of a living-donor liver transplantation program in the Kyrgyz Republic.

Materials and Methods: According to Order No. 6 of the Ministry of Health of the Kyrgyz Republic (January 23, 2024) and a bilateral agreement with Inonu University (Turkey), 13 specialists from the M.M. Mamakeev National Surgical Center completed clinical training at the Liver Transplant Institute of Turgut Ozal Hospital (Malatya). The multidisciplinary team, including surgeons, anesthesiologists-resuscitators, radiologists, laboratory specialists, and nurses, underwent 1–3 months of training involving surgical procedures, diagnostic evaluation, multidisciplinary consultations, and laboratory and radiological assessment of donors and recipients.

Results: During the internship, specialists participated in more than 50 living-donor liver transplantations and 5 kidney transplants, assisting in over 30 procedures in adult and pediatric patients. Approximately 20% of recipients were children aged 4 months to 12 years. The team studied the structure of a modern transplant center, including a 150-bed hospital, intensive care units, advanced diagnostic departments (CT, MRI, ultrasound, endoscopy), laboratory facilities, and outpatient services. Experience was gained in donor and recipient selection, HLA typing, panel reactive antibody (PRA) testing, immunosuppressive therapy monitoring, radiological

diagnostics, and postoperative patient management, including complication treatment.

In 2024, two living-donor liver transplantations were successfully performed at the Kyrgyz-Turkish Dostuk Hospital with participation of local specialists and colleagues from Turkey, demonstrating practical implementation of acquired competencies.

A list of transplant-related nosologies was developed, contraindications were defined, draft regulatory documents were prepared, and preliminary requirements for equipment, medications, and consumables were determining.

Conclusion: The obtained experience confirms the feasibility of implementing a living-donor liver transplantation program in the Kyrgyz Republic. Establishing a trained multidisciplinary team and regulatory basis provides a foundation for expanding high-technology medical care and improving access to liver transplantation.

Keywords: liver transplantation, living donor transplantation, immunosuppression, Kyrgyz Republic

O31

Heart Transplantation in the Republic of Belarus

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Heart transplantation in the Republic of Belarus represents one of the most advanced and well-structured programs in the CIS region. The program was initiated in 2008, when the first successful heart transplantation was performed. Since then, the Republican Scientific and Practical Centre of Cardiology in Minsk has become the national reference center for cardiac transplantation. To date, more than 500 heart transplantations have been performed, with a stable annual activity of approximately 40 to 60 procedures. Clinical outcomes are comparable to international benchmarks, with a 1-year survival rate of about 85–90% and a 5-year survival rate of 70–75%. — The success of the program is largely attributed to its centralized organizational model. Belarus has implemented a national donor coordination system, a unified waiting list, and efficient donor–recipient logistics. The program is fully supported by the state, ensuring equitable access and optimal utilization of donor organs. — Patient selection is строго standardized. Indications include: • End-stage heart failure, NYHA class III–IV • Left ventricular ejection fraction below 25% • Refractory course despite optimal medical and device therapy, including CRT and LVAD Contraindications include: • Active infections • Malignancies • Severe comorbidities significantly limiting life expectancy — Immunosuppressive therapy follows contemporary protocols. Induction therapy typically includes basiliximab or antithymocyte globulin. Maintenance regimens are based on a triple-drug combination: • Calcineurin inhibitors, primarily tacrolimus • Mycophenolate mofetil or mycophenolic acid • Corticosteroids — Post-transplant monitoring is rigorous and includes: • Regular endomyocardial biopsy as the gold standard for rejection surveillance • Echocardiography and cardiac MRI • Monitoring for infectious complications • Therapeutic drug level monitoring — In conclusion, the Belarusian heart transplantation program demonstrates high surgical expertise, strong organizational infrastructure,

and outcomes comparable to leading international centers. It serves as a model for the development of transplant programs in other countries of the region.

P1

Impact of CYP3A5 Gene Polymorphism on Tacrolimus Pharmacokinetics in Kidney Transplant Patients: Evidence in Kazakh Population

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Introduction: Kidney transplantation nowadays is the best therapeutic option for end-stage kidney disease. Kidney transplantation is the most preferable treatment option of terminal chronic kidney disease. The main advantage of kidney transplantation is that graft totally replaces the function of diseased kidney. Improvement of the quality of life of patients and return to their daily activities is another great advantage of this option.

With the improvement of donor selection, surgical technique and rational immunosuppressive treatment rates of short-term graft survival great increased. 1 –year graft survival from deceased donor is 95% whereas from living related donor is 98%. In Kazakhstan 1-year graft survival from living related donor is 91%. Despite these high indicators of 1-year graft survival, 5-year graft survival rates remain to be low. For example, in USA 5-year graft survival from decease donor is up to 80%, whereas from living donor is form 82 to 90 %, respectively. Thus, despite the improvement of short-term graft survival rates, long-term graft survival rates remain to be low. Recently there are many transplant centers where genetic factors and their influence of kidney graft function are investigated. In this way investigation of CYP3A5 genetic polymorphism, as a regulatory factor of tacrolimus pharmacokinetics is being more relevant. The aim of this work is to investigate the influence of CYP 3A5 genetic polymorphism of tacrolimus pharmacokinetics.

Method: We conducted a clinical trial, where we include 80 kidney recipients. Of them, 47 were male and 33 female patients. Mean age of patients was 43±4.1 years. All patients had been taking tacrolimus 0.1 mg/kg initially. Dose adjustment was by 1.0 mg a day up to target concentration (10-12 ng/ml). All patients were studied for CYP3A5 genetic polymorphism.

Results: According to the results in our study 61.25% (n=49) of patients were homozygotes, CYP3A5*3*3 carriers (non-expressers) and 38.75% (n=31) were heterozygotes, CYP3A5*1*3 carriers (with one expressor allele). Patients were arranged by sex/type of polymorphism by Fisher's test. There were no significant differences in sex/CYP3A5 genetic polymorphism in patients. Patients were divided into 2 groups: homozygotes and heterozygotes. Tacrolimus concentration was measured on 2, 5th , 7th , 10th and 14th days after surgery and at discharge. There were significant differences in concentrations on 2nd, 5th, 7th and 10th days in both groups (p = 0.02, 0.01, 0.12 and 0.016, respectively). There were no significant statistical differences in tacrolimus concentration on 14 day after the surgery and at discharge (p = 0.085 and 0.171, respectively). In both groups tacrolimus almost reached target level at the end of 2nd week, but in heterozygotes increase was more gradual and predictable rather than in homozygotes. There were no substantial differences in graft function. Creatinine level normalized gradually in both groups and there were not significant differences in both groups at discharge

Conclusion: It is obvious from received results, that genetic polymorphism of CYP3A5 influences tacrolimus blood concentrations that appears to be key factor in immunosuppression.

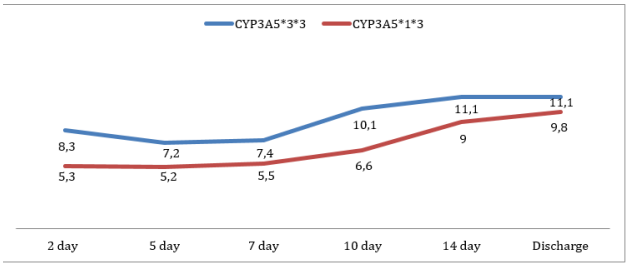

Fig. 1 Changes of tacrolimus concentration (ng/ml) with CYP 3A5 genetic polymorphism

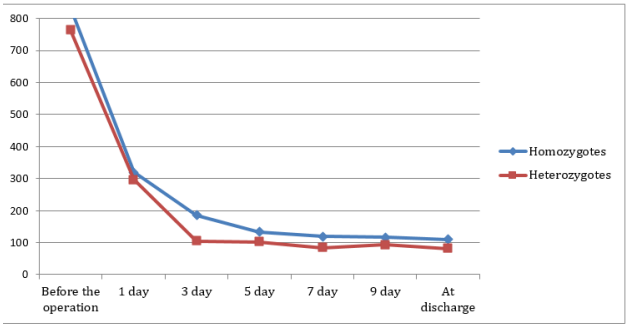

Fig. 2 Changes of creatinine (μmol/l) level in kidney patients with CYP3A5 genetic polymorphism

Type of poymorphism		2 day	5 day	7 day	10 day	14 day	Discharge
CYP3A5*1*3	N	31	31	31	31	31	31
	Average	5,3	5,2	5,5	6,6	9,0	9,8
	Std. Deviation	3,0	2,6	1,7	2,2	2,6	1,9
	Median	4,4	4,6	5,5	6,8	8,3	9,3
	Range	10,2	9,8	6,00	7,90	8,9	5,0
CYP3A5*3*3	N	49	49	49	49	49	49
	Average	8,3	7,2	7,4	10,1	11,1	11,1
	St. D	5,2	2,4	2,2	3,9	4,4	2,9
	Median	7,1	6,5	6,8	10,0	9,9	11,0
	Range	27,0	8,2	8,20	14,10	19,4	13,7
	p	0,020	0,010	0,012	0,016	0,085	0,171

Table1 Changes of Tacrolimus concentration in both groups (Mann - Whitney U test)

Poster

P2

Laparoscopic Hand-Assisted Donor Heminephrectomy in Living Donor With Horseshoe Kidney

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Report of our clinical case of laparoscopic hand-assisted donor heminephrectomy in living donor with horseshoe kidney (HSK) has a good innovation in donor kidney retrieval technique and particularly in case of congenital anomalies.

Kidney transplantation is a "gold standard" of treatment of chronic kidney disease in terminal stage. Nowadays there is a strong deficit of donor organs. Due to undeveloped cadaveric kidney transplantation we always try to accept donors with different anatomic particularities. In our practice we perform traditionally laparoscopic hand-assisted donor nephrectomy either in case of single artery and vein or multiple vessels.

This case is a report of kidney transplantation from 65 – year's old woman for her 39-years old son with end-stage renal disease (ESRD). Technical challenge was due to that donor had a HSK with parenchymal isthmus, with 4 arteries on right half and 2 arteries on the left with retrocaval position of the latters.

We performed literature review for similar cases and found out that usually open laparotomy was performed in this patients. So we decided not to change the familiar for us technique in this case also. Donor underwent laparoscopic hand-assisted donor heminephrectomy with subsequent successful implantation of graft and immediate function.

Figure 1

Figure 2

Poster

P3

Azathioprine Induced Pancytopenia after Kidney Transplantation during Pregnancy Preparation

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Introduction: Kidney transplantation remains the mainstay of treatment for patients with end-stage kidney disease. Optimization of immunosuppression is thus important to improve the clinical outcome of transplant recipients. Azathioprine has been widely used in renal transplantation for four decades but is now substituted by the more efficacious MMF in most transplant centers but MMF is not recommended for use during pregnancy due to its teratogenic properties. Our patient's immunosuppressive regimen was switched from mycophenolate mofetil to azathioprine due to plans for pregnancy. One of the most important and feared side effects of azathioprine is bone marrow suppression. Patients usually recovers following withdrawal of the drug or reduction in dose. But in few patients azathioprine causes severe life threatening bone marrow suppression leading to hospitalization. Infections remain the major risk during the phase of leucopenia. This work aimed to diagnose and treat azathioprine induced toxicity without TMPT genotyping.

Case study: A 34-year-old female underwent a kidney transplant from a deceased donor on May 25, 2019. The patient's immunosuppressive regimen consisted of advagraf 2mg, metipred 4mg and mycophenolate mofetil. As of July 1, 2023, the patient's immunosuppressive therapy was switched from mycophenolate mofetil to azathioprine 100 mg due to plans for pregnancy. The TPMT enzyme level was not assessed before the initiation of azathioprine, cause genotyping is not routine practice in Kazakhstan, primarily due to its high cost and limited availability. The azathioprine dosage was reduced to 75mg on July 20, 2023 because of side effects. Azathioprine was discontinued the following day. On the 23rd of July, 2023, the patient was admitted to the national scientific center of surgery named after A.N.Syzganov presenting with pancytopenia, oral ulcers, alopecia, fever and fatigue.

On July 13, 2023, the patient encountered alopecia. By July 17th, there was a worsening of the alopecia condition. On 20.07.2023 her temperature was 39°C and she reported feeling fatigued. The patient used NSAIDs, but they were not effective.She developed stomatitis. The patient was found to have pancytopenia and was instructed to immediately stop azathioprine. She was admitted to the hospital for evaluation and management of her pancytopenia.

During her hospital course, the patient's oral ulcers were treated with valacyclovir. For febrile neutropenia she was given ceftriaxone, nistatin, fluconazole, dexametasone(metipred was stopped) and two dose of subcutaneous filgrastim.The patient received recormon for anemia and revolade 50mg for thrombocytopenia. Based on clinical indications, blood transfusions were administered. The patient's condition improved after three weeks, indicating that the suspected azathioprine-induced pancytopenia was successfully managed.

Conclusions: Given the sequential relationship of azathioprine initiation with myelosuppression and azathioprine withdrawal with recovery, azathioprine induced myelosuppression appeared to be a reasonable explanation in our case even without TPMT genotyping, cause azathioprine induced pancytopenia is not restricted to abnormal TPMT levels. Blood parameters should be monitored routinely in all patients regardless of TPMT activity while they are on azathioprine therapy.

Figure 1

Table 1

Blood parameter	21/07	23/07	25/07	28/07	29/07	31/07	01/08	03/08	24/08
Hb(g/L)	96	73	68	86,4	87	86,9	86	79	92
WBC (10^9/L)	4,2	0,3	0,7	0,87	1,2	0,88	1	1,2	5,33
PLT (10^9/L)	178	13	38	17,5	36	10,9	6	13	206

Poster

P4

Donor-Recipient Size Mismatch in Pediatric Kidney Transplantation: A Clinical Case Report

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Case presentation

A 4.5-year-old boy, weighing 14 kg and measuring 94 cm in height, had renal dysplasia and kidney failure and admitted to Children's University Hospital in Damascus to prepare him for a preemptive kidney transplantation (KT). The donor was the father, 44-year-old, 79 kg, his height was 171 cm. Donor-recipient height ratio: 171/94 = 1.82.

Surgical technique: An extraperitoneal approach was selected. The donor's renal artery was anastomosed to the recipient's common iliac artery using an end-to-side technique. The donor's renal vein was anastomosed to the recipient's common iliac vein in the same technique.

Immunosuppressive protocol: ATG was administered preoperatively as induction therapy, once daily, and during the first 3 days post-KT.
IV Methylprednisolone during surgical operation, and on day 1 and day 2 after surgery.
Maintenance immunosuppression: MMF, Tacrolimus and Prednisolone.
Surgical operation was successful with immediate graft function.

Management after surgery: IV Fluids, urine output replacement (100%) during first 48h, immunosuppressive drugs, antibiotics, close clinical and laboratory monitoring.
Day 1: Urea: 48 mg/dl, Creat: 1.4 mg/dl, HGB: 6.8 g/dl. The child started to develop hypotension. He was managed with Red Blood Cell Transfusion, strict fluid management and Fresh Frozen Plasma Transfusion.
Urea and Creat levels gradually increased.
Day 3: Kidney Graft Doppler Ultrasound (DUS): Kidney graft was of large size; its parenchyma was homogeneous and well-differentiated. Main artery and vein of kidney graft were patent and normal. Peripheral hypoperfusion.
Day 4: Urea: 185 mg/dl, Creat: 2.9 mg/dl, HGB: 8 g/dl. He was managed by Red Blood Cell Transfusion, Fresh Frozen Plasma Transfusion, strict fluids management.
Day 6: Renogram: The transplanted kidney appeared to be non-perfused. Secretory and excretory function are absent. Despite the findings of renogram, urine output improved after KT.
Day 10: Urea: 175 mg/dl, Creat: 2.7 mg/dl. DUS: Echogenic appearance improved, corticomedullary differentiation was good, peripheral perfusion started to be detected in the arcuate arteries.
Day 12: Kidney graft biopsy was performed, surprisingly, histological findings were: Hemorrhagic infarction involving 90% of the cortical tissue submitted for examination. This was disproportionate to the findings of DUS. This discrepancy may be because the biopsy was taken only from an area of ischemic parenchyma.
Day 15: DUS: No sign of graft rejection. Peripheral perfusion improved. Urea: 140 mg/dl, Creat: 2.5 mg/dl.
The child was discharged from hospital with strict recommendations.

Outcomes: Now, 3.5 years post-KT: Our patient is 8 years old, weighs 17 kg, and his height is 105 cm. He is doing well, with CKD stage 3, on conservative management and regular monitoring. Urea: 70 – 80 mg/dl. Creat: 2 – 2.5 mg/dl.
DUS: Kidney graft has normal shape, 7 cm, preserved corticomedullary differentiation, cortical thickness of 7 mm.

Conclusion: Kidney transplantation is the optimal treatment for kidney failure in young children. However, it can be challenging in low weight children (≤15 kg) with increase the risk of graft loss and mortality. To employ adult-sized grafts in pediatric KT, the surgeon may need to modify the surgical technique, with strict fluid management and close hemodynamic monitoring.

Poster

P5

Pharmacogenetic and Inflammatory Determinants of Tacrolimus Exposure in Kidney Transplant Recipients: First Data from Kazakhstan

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Background: Tacrolimus remains the cornerstone of immunosuppressive therapy after kidney transplantation; however, its clinical use is complicated by substantial interindividual variability in pharmacokinetics. Genetic polymorphisms of CYP3A5 and CYP3A4 are established determinants of tacrolimus metabolism, while inflammatory mediators—particularly interleukin-6 (IL-6)—may transiently modulate CYP3A activity. Evidence regarding the combined influence of genetic and inflammatory factors in Central Asian populations is limited.

Objective: To assess the association between CYP3A5 (rs776746), CYP3A4 (rs2740574), and CYP2D6 (rs3892097) polymorphisms and serum IL-6 levels, and to explore their potential relationship with tacrolimus blood concentrations in kidney transplant recipients in Kazakhstan.

Materials and Methods. A prospective observational study included 51 adult kidney transplant recipients treated with tacrolimus at the A.N. Syzganov National Scientific Center of Surgery (Almaty, Kazakhstan) in 2024–2025. Genotyping was performed using real-time PCR with TaqMan® assays. Serum IL-6 levels were measured by ELISA. Tacrolimus whole-blood concentrations were determined using chemiluminescent immunoassay. Continuous variables were expressed as median (IQR). Group comparisons were conducted using the Mann–Whitney U test; correlations were assessed using Spearman's coefficient. Statistical significance was set at $p < 0.05$.

Results: Genotype distributions of CYP3A5, CYP3A4, and CYP2D6 were consistent with those reported in mixed Eurasian populations. Approximately 40% of patients carried the CYP3A5 non-expressor allele. No statistically significant differences in IL-6 levels were observed across genotype groups ($p > 0.05$). Carriers of the CYP3A5 non-expressor allele demonstrated a non-significant trend toward higher IL-6 concentrations. Correlation analysis revealed no significant association between tacrolimus blood concentrations and serum IL-6 levels ($\rho = -0.071$; $p = 0.658$).

Conclusions: In this cohort of kidney transplant recipients from Kazakhstan, neither CYP3A polymorphisms nor IL-6 levels showed a statistically significant impact on tacrolimus exposure. The absence of significant associations may be related to limited sample size, low cytokine variability, and routine therapeutic drug monitoring with timely dose adjustment. Nevertheless, the observed trend toward higher IL-6 levels in CYP3A5 non-expressors supports the hypothesis of a potential interaction between genetic background and inflammatory status. These findings provide the first integrated pharmacogenetic–inflammatory analysis of tacrolimus therapy in Kazakhstan and highlight the need for larger multicenter studies with longitudinal cytokine assessment and clinical outcome evaluation.

Keywords: tacrolimus, kidney transplantation, CYP3A5, CYP3A4, interleukin-6, pharmacogenetics, Kazakhstan.

Poster

P6

Indexed Urinary Biomarker in the Assessment of Stable Kidney Allograft Function

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Background. Monitoring of kidney allograft function primarily relies on estimated glomerular filtration rate (eGFR) and serum creatinine, which reflect established dysfunction and show limited sensitivity for early glomerular injury. Structural alterations may precede measurable decline in filtration capacity, highlighting the need for biomarkers detecting subclinical graft damage. An indexed urinary biomarker normalized to urinary creatinine provides a standardized measure that reduces hydration-related variability. In transplantation, it may indicate early glomerular or microvascular changes even without overt rejection; however, its variability in clinically stable recipients remains insufficiently characterized.

Objective. To evaluate the distribution of an indexed urinary biomarker in kidney transplant recipients with stable graft function and assess its association with eGFR.

Materials and Methods. A retrospective observational study included 171 kidney transplant recipients aged 40–70 years. Inclusion required simultaneous laboratory measurements from a random morning urine sample for calculation of the indexed parameter. Urinary analyses were performed using automated biochemical analyzers (Cobas 303 and Cobas 311, Roche Diagnostics). The indexed biomarker was defined as the ratio of urinary protein to urinary creatinine from the same specimen. Graft function was assessed using eGFR calculated by a standard formula. Descriptive statistics included mean, median, interquartile range, and standard deviation. Correlations were evaluated using Spearman's rank coefficient (ρ), with $p < 0.05$ considered significant.

Results. The mean age was 53.2 years. No clinically confirmed episodes of acute rejection were documented, and graft function was stable. Median indexed biomarker values were within reference ranges; however, mean values were higher due to extreme outliers, indicating skewed distribution. Most recipients showed stable urinary findings, though a subgroup had elevated indexed values despite preserved filtration function. eGFR remained within ranges consistent with satisfactory graft performance. Correlation analysis showed no significant association between absolute urinary components ($\rho = -0.037$; $p = 0.631$). The relationship between the indexed biomarker and eGFR was weak and non-significant, indicating no direct linear association.

Discussion. Preserved eGFR and absence of rejection suggest that variability of the indexed biomarker may reflect subclinical graft alterations not detected by conventional parameters. These findings support the concept that increased glomerular permeability may precede measurable reduction in filtration rate. Normalization to urinary creatinine improves analytical stability and reduces hydration-related variability. Its sensitivity to subtle permeability changes supports its potential role as an adjunct marker for early detection of microvascular injury and emerging chronic allograft dysfunction. Limitations include the retrospective design and absence of long-term outcome assessment.

Conclusions. In kidney transplant recipients with stable graft function and no rejection, the indexed urinary biomarker showed variability despite preserved eGFR. Although no significant association with filtration capacity was observed, it may serve as an early marker of subclinical graft alterations. Prospective studies are required to clarify its prognostic value.

Keywords: indexed urinary biomarker, stable graft function, estimated glomerular filtration rate, kidney transplantation, subclinical graft dysfunction.

Poster

P7

Type II (Proximal) Renal Tubular Acidosis in HIV-Renal Transplant Patient

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Background and Aims: Historically, individuals living with HIV were not candidates for kidney transplantation. However, this paradigm has shifted with the appearance of new drugs. Although they are effective, these medications might have drug-drug interactions that require immediate intervention. Our patient received abacavir/dolutegravir/lamivudine as ART and tacrolimus as an immunosuppressant needed for kidney transplant recipients. There is a notable case of type 2 tubular acidosis that was not previously discussed or mentioned in previous literature. This report examines possible mechanisms of the aforementioned complication and proposes preventive strategies.

Method: A 38-year-old Asian man, HIV-infected, on ART, presented with features of ESRD: serum creatinine 1000 µmol/L, scarred kidneys on ultrasound. Intermittent hemodialysis was initiated immediately. Three years later, the patient underwent a kidney transplant from a living donor from his father. There were no postoperative complications.

Results: The induction immunosuppressive therapy included basiliximab, and maintenance therapy consisted of prednisolone, mycophenolate mofetil, and tacrolimus. After the transplantation, the creatinine level declined to 130 µmol/L. From the first day after the transplantation, mild hyponatremia was noted.

After a year, the patient presented with a blood pressure of 160/90mmHg. The patient was on hypotensive therapy: 10 mg perindopril and 2.5 mg indapamide. He developed muscle weakness and vomiting, which led to his hospitalization. The analysis results below showed normal anion gap metabolic acidosis.

Laboratory findings upon admission:
Serum bicarbonate: 14.7 mmol/L (22-29 mmol/L)
Serum sodium: 102 mmol/L (135-145 mmol/L)
Serum potassium: 2.5 mmol/L (3.5-5.2 mmol/L)
Creatinine: 141 µmol/L (65.4-119.3 µmol/L)
Tacrolimus trough level: 9 ng/mL (target level should be 5-7 ng/mL)

In the ICU, he was given intravenous therapy. After stabilization of the patient's condition, he was referred to a nephrologist. The patient was diagnosed with type II RTA in the context of chronic tubulointerstitial nephritis. Sodium bicarbonate and potassium aspartate hemihydrate were prescribed. The tacrolimus level was reduced to 7 ng/mL. Indapamide was discontinued.

In June 2024, metabolic acidosis, hyponatremia, and hypokalemia were resolved and laboratory results were normal.

Conclusion: The exact mechanism of type II RTA in this particular case cannot be explained for sure. Tacrolimus is associated with tubular toxicity, which could lead to impaired bicarbonate reabsorption. Moreover, dolutegravir can inhibit tacrolimus metabolism via CYP3A4, which leads to increased tacrolimus trough levels. Indapamide might have contributed to this by causing potassium loss, which could impair tubular function.

Tacrolimus levels and electrolytes should be monitored regularly, to prevent any cases of metabolic disturbances. Consider choosing antihypertensive drugs other than indapamide to avoid the aforementioned problem.

Figure

	After transplantation	1 month after	6 months after	9 months after	12 months after	15 months after	16 months after	17 months after	21 months after
	03.23	04.23	09.23	12.23	03.24	06.24	07.24	08.24	12.24
Crea µmol/L	158	146	140	157	139	141	157	140	145
Urea mmol/L	10,4	6,6	5,8	8,5	6,2	8,6	5,4	6	6,5
Tac+ ng/mL	10	11	10	9	7	9	6,5	6,0	6,5
Na mmol/L	131	130	131	131	126	102	134	132	133
K mmol/L	5,1	4,2	4,4	4,5	4,1	2,5	4,4	4,5	4,4
Cl mmol/L						87	110	108	109
pH						7,31	7,38	7,4	7,38
cHCO3-(P,st) mmol/L						14,7	23,0	22,4	23
cBase(Esf) mmol/L						-11,4	-1,8	-2,9	-1,7
pO2 mmHg						24	87	90	88
PCO2 mmHg						27,9	38,6	34,5	39,7

Poster

P8

Small-for-Size Syndrome in Living Donor Liver Transplantation

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Introduction: Small-for-size syndrome (SFSS) is one of the leading causes of early graft dysfunction following living donor liver transplantation (LDLT). Currently, SFSS is regarded as a consequence of portal hyperperfusion and functional mismatch between portal inflow and the graft's microcirculatory reserve ("small-for-flow"), rather than solely a problem of insufficient liver volume.

Objective: To evaluate the impact of portal hyperperfusion on the development of SFSS and to assess the effectiveness of portal flow modulation, taking into account morphometric and hemodynamic parameters.

Materials and Methods: The outcomes of liver transplantations performed between 2011 and February 2026 were analyzed. A total of 352 liver transplantations were carried out, of which 266 (75.5%) were living donor liver transplantations (LDLT) in adult recipients. The following parameters were assessed: graft-to-recipient weight ratio (GRWR), spleen-to-graft volume ratio (SVGVR), portal venous flow (PVF), and portal venous pressure (PVP), measured intraoperatively. In cases of portal hyperperfusion, portal inflow modulation was performed, including splenic artery ligation or splenectomy.

Results: Portal inflow modulation was performed in 37 patients (13.9% of all adult LDLT recipients). Among them, intraoperative correction was carried out in 31 cases (83.8%), while postoperative modulation was required in 6 cases (16.2%). The main techniques included splenic artery ligation (n = 22) and splenectomy (n = 9).

In the subgroup of patients with GRWR < 0.8 (n = 50), portal inflow modulation was required in 21 cases (42%). Prior to correction, these patients demonstrated markedly elevated PVF (≈310 mL/min/100 g) and PVP (≈20 mmHg). Following modulation, PVF decreased by an average of 23–30%, and PVP declined to physiological levels (~12 mmHg). The incidence of SFSS in this subgroup was 5.8% with modulation compared to 17.9% without modulation, with a corresponding reduction in mortality.

In the group with GRWR > 0.8 (n = 260), portal hyperperfusion was identified in 15 patients (5.8%), necessitating intraoperative modulation. Despite adequate graft volume, these recipients exhibited baseline PVF and PVP values exceeding threshold levels. After correction of portal hemodynamics, parameters normalized, and SFSS developed in only one case, with no associated mortality.

Analysis of SVGVR demonstrated that in patients with SVGVR > 1.0 (n = 61), portal inflow modulation was performed significantly more frequently (31.1%) compared to those with SVGVR < 1.0 (6.3%). Elevated SVGVR was associated with higher PVF and PVP values, an increased incidence of SFSS (9.8%), and a statistically significant rise in mortality (9.8%).

The most unfavorable outcomes were observed in cases of delayed postoperative modulation: SFSS developed in all patients within this subgroup, and mortality reached 66.7%, whereas with intraoperative correction, SFSS occurred in only 3.6% of cases.

Conclusion: In LDLT, SFSS is primarily determined by portal hyperperfusion. The combination of GRWR < 0.8 and SVGVR > 1.0 represents the most unfavorable prognostic profile. Intraoperative portal inflow modulation effectively reduces PVF and PVP, decreases the incidence of SFSS, and improves early post-transplant outcomes, thereby supporting the "small-for-flow" concept.

Poster

P9

Ethical Challenges in Developing Deceased Organ Donation in Uzbekistan: The Influence of Cultural, Religious, and Legal Factors

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Global insufficiency of organs remains as a major ethical and medical challenge in transplantation. Looking at back times in Uzbekistan we can see that most of donors of kidneys and livers were relatives of patients. As a result, many patients with end-stage organ failure without timely access to treatment. The Law of the Republic of Uzbekistan No. LRU-768, adopted on May 11, 2022, introduced for the first time the legal framework for organ donation of the deceased. An opt-in system was established that allows organ extraction only with prior notarized written consent of the donors, given during their lifetime. Despite this progressive legislative step deceased donation activity remains extremely low. By 2026, there had not been a single documented case of consensual organ donation after death.

There are four fundamental bioethical principles that must be followed by deceased organ according to an ethical perspective.

The voluntary participation model strongly protects individual autonomy by requiring explicit consent but the complexity of administration, limited public awareness, and lack of widespread consent registration causes persistently low donation rates to steady low donation rates.

Saving lives as many as possible — is limited due to the lack of available organs. Justice puts questions about the fair distribution of organs in a system with chronic shortages, while the lack of harmfulness is threatened by ongoing public concerns about organ trafficking and exploitation, although the law strictly forbids commercialization. Also, cultural and religious factors impact public attitudes. Muslims take predominant part of population in Uzbekistan and on org.an donation is generally permissive by Islamic jurisprudence. The main fatwas from reputable sources in Saudi Arabia, Egypt, and local religious organizations recognize donation as an acceptable act of charity and solidarity aimed at saving lives. However, deep-rooted cultural norms regarding respect for the body of the deceased, fear of desecration and traditional ideas about the preservation of the body after death cause resistance. These views are reinforced by widespread distrust of the healthcare system and historical concerns about unequal access to health services.

The combination of these factors creates a vicious circle: low levels of consent, a small number of deceased donors, long waiting lists, and constant pressure on living relatives to become donors. Solving these problems requires a multifaceted approach that considers cultural and religious specificities while meeting transplant needs. Targeted public education campaigns, developed in partnership with imams, muftis, and community leaders, could clarify the permissibility of Islam and dispel myths. Simplifying the consent process, increasing the transparency of organ allocation, and strengthening legal safeguards against human trafficking are essential to restore trust.

In conclusion, the development of organ donation in Uzbekistan requires an ethically balanced strategy that combines legislative progress with genuine participation of cultural and religious communities. Only through this approach will the country be able to move towards reducing dependence on living donors, alleviating suffering and saving more lives amid the growing demand for transplantation.

P10

Transversus Abdominis Plane Block for Postoperative Analgesia after Living Donor Nephrectomy

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Introduction: Adequate multimodal postoperative analgesia not only reduces the patient›s subjective perception of pain, but also shortens hospital stay due to early mobilization, prevention of postoperative intestinal obstruction, and other benefits. Recently, interfascial plane block techniques have been demonstrated as an effective component of multimodal anesthesia in various surgical fields, including transplant surgery.

The aim: of our study was to evaluate the effectiveness of postoperative analgesia provided by intraoperatively performed Transversus abdominis plane block (TAP block) during nephrectomy in a living related donor.

Materials and methods: A prospective study were conducted involving 18 male patients who underwent elective living related donor nephrectomy. The mean age of patients was 34±7.8 years. Extraperitoneal nephrectomy was performed through a pararectal (crescentic) surgical approach. All operations were carried out by the same surgical team under combined general anesthesia. Anesthesia induction included Propofol 1–2 mg/kg, Fentanyl 2–5 μg/kg, and Cisatracurium (Myoxant) 0.1 mg/kg. Maintenance of anesthesia included Isoflurane 2–2.5 vol% (MAC 0.8–1.2), fentanyl 5 μg/kg/h, and cisatracurium 2.5–5 mg/h. Patients were randomized into 2 groups: the control group (n=9), in which scheduled postoperative analgesia was administered: Paracetamol 1 g intravenously one hour before the end of surgery, Ketorolac 30 mg intravenously every 12 hours, and Metamizole 1000 mg every 8 hours. In the main group (n=9), in addition to scheduled analgesia, an open TAP block was performed at the end of surgery under direct visual control by the surgeon using 0.25% Bupivacaine solution 50 mg on the side of the surgical incision with the addition of Dexamethasone 4 mg as an adjuvant to the local anesthetic. In the postoperative period, patients had access to intravenous Morphine hydrochloride. The effectiveness of postoperative analgesia was assessed during the first 24 hours after surgery (2, 8, 16 and 24 hours) at rest and during movement using the visual analogue scale (VAS), and the mean score was determined. Standard monitoring parameters (heart rate, non-invasive blood pressure, oxygen saturation, body temperature), incidence of postoperative nausea and vomiting, and morphine consumption per patient were also studied.

Results: During the first postoperative day, pain intensity at rest in patients of the control group averaged 4.4 ±1.4 points, while in the main group it was 1.9 ±0.98 points. Patients in the control and main groups assessed pain during movement at 5.3 ±1.64 and 2.49 ±1.43 points, respectively ($p<0.05$).

In the control group, morphine consumption during the first 24 hours amounted to 7.5 ±3.73 mg per patient, whereas in the main group this indicator was minimal and amounted to 0.69 ±1.78 mg ($p<0.05$). In the control group, 5 patients (55.5%) complained of nausea on the first postoperative day. In 3 patients (33.3%), vomiting was observed once. In the main group, 2 patients (22.2%) complained of nausea on the first postoperative day, while vomiting was not observed, probably due to lower opioid consumption and more adequate pain control.

Conclusions: Transversus abdominis plane block combined with non-opioid analgesics during the first day after donor nephrectomy significantly reduces pain intensity.

Poster

P11

Launch of a Kidney Transplantation Program in a Newly Established Center: First Clinical Results

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Background: Kidney transplantation is the most effective form of renal replacement therapy for patients with end-stage kidney disease (ESKD). Despite substantial progress in transplant medicine, access to transplantation remains limited in many countries, primarily due to the shortage of donor organs. In the Republic of Uzbekistan, living related donation currently represents the principal source of donor organs under the existing legal framework. In September 2025, a specialized Department of Kidney Surgery and Transplantation was established at the Republican Specialized Scientific and Practical Medical Center of Nephrology and Kidney Transplantation in Tashkent, marking an important step in the development of the national transplantation program.

Objective: To analyze the organizational aspects of launching a kidney transplantation program and to evaluate the initial clinical outcomes of kidney transplantations performed using living related donors.

Materials and Methods: A retrospective analysis of the first kidney transplantations performed after the program launch was conducted. The study included 32 patients who underwent kidney transplantation between September 26, 2025, and March 12, 2026. Donor and recipient selection was based on comprehensive clinical, laboratory, and instrumental evaluation, including immunological assessment with HLA typing, panel reactive antibodies (PRA), and crossmatch testing.

Results: Recipient age ranged from 19 to 56 years (mean 39.8 years). The majority of recipients were male (26 patients, 81%), while females accounted for 6 cases (19%). The predominant cause of ESKD was chronic glomerulonephritis (31 patients), while diabetic nephropathy was identified in three cases. The duration of dialysis therapy prior to transplantation ranged from less than one month to ten months.

Donor age ranged from 21 to 55 years (mean 41 years). Female donors predominated (21 cases, 66%), while male donors accounted for 11 cases (34%). All donors were close relatives of the recipients, including parents, spouses, and siblings.

Early graft function was satisfactory in the majority of patients. Immediate graft function was observed in 30 recipients, whereas delayed graft function occurred in two cases. No early vascular, urological, or infectious complications were observed. No mortality was recorded. The average hospital stay ranged from 5 to 10 days.

Conclusions: The launch of a kidney transplantation program at a newly established specialized center allowed the creation of an effective system for providing high-technology care to patients with ESKD. Early outcomes of living related donor kidney transplantation demonstrated a high level of surgical safety, satisfactory early graft function, and the absence of major postoperative complications.

These findings indicate that successful implementation of kidney transplantation programs in new medical centers is feasible when supported by modern infrastructure, a multidisciplinary team, and adherence to international clinical protocols.

Poster

P12

Bariatric Surgery as a Strategy for Preoperative Optimization in Living Liver Donors

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Background: Obesity in potential living liver donors represents a significant limiting factor for donation, as it is strongly associated with hepatic steatosis and an increased risk of perioperative complications. In recent years, bariatric surgery has emerged as a promising strategy for preoperative optimization of overweight and obese donors prior to liver transplantation.

Aim: The aim of this study was to evaluate the safety and efficacy of bariatric surgery in obese living liver donors prior to donor hepatectomy.

Materials and Methods: This study included two potential living liver donors with a body mass index (BMI) greater than 34 kg/m², both of whom were related donors for pediatric recipients with end-stage liver disease. The recipients were aged 9 months (7.3 kg) and 8 months (6.9 kg), respectively. Preoperative evaluation revealed significant hepatic steatosis in both donors, which contraindicated partial liver donation. In order to reduce body weight and improve hepatic status, both donors underwent bariatric surgery in the form of laparoscopic Roux-en-Y gastric bypass. Postoperative follow-up included serial assessment of BMI, biochemical liver function parameters, and imaging studies. At 4 and 5 months after bariatric surgery, respectively, both donors achieved target weight reduction and clinical stabilization. Follow-up evaluation demonstrated resolution of hepatic steatosis, allowing both individuals to proceed to donor hemihepatectomy.

Results: Both donors exhibited a substantial reduction in BMI, normalization of liver biochemical parameters, and absence of clinically significant steatosis on imaging. Bariatric surgery and subsequent donor hepatectomy were performed without intraoperative or postoperative complications. Liver transplantation in the pediatric recipients was successful, with satisfactory graft function observed in the early postoperative period.

Conclusion: Bariatric surgery, particularly Roux-en-Y gastric bypass, represents a safe and effective strategy for preoperative optimization of obese living liver donors. This approach may expand the donor pool and improve the safety of living donor liver transplantation, especially in pediatric settings.

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Poster

P13

Allogeneic Fibroblast Transplantation in the Treatment of Long-Term Non-Healing Ischemic Wounds of the Lower Extremities

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Background: Chronic non-healing wounds in patients with peripheral arterial disease remain a major clinical challenge despite successful revascularization. Impaired tissue regeneration and persistent inflammation limit wound healing outcomes. Cell-based therapies, particularly allogeneic fibroblasts, may enhance reparative processes and improve clinical results.

Objective: To evaluate the effectiveness of a combined treatment approach involving endovascular revascularization and local application of allogeneic fibroblasts.

Methods: A prospective comparative study included 116 patients with chronic non-healing lower limb wounds caused by peripheral arterial disease. Patients were divided into two groups: the main group (n=58) underwent endovascular revascularization combined with local application of allogeneic fibroblasts, while the control group (n=58) received standard wound care after revascularization. Outcomes included wound healing rates, time to epithelialization, reduction in wound size, need for re-interventions, and amputation rates. Follow-up duration was 12 months.

Results: The combined therapy demonstrated significant clinical superiority. At 12 months, primary wound healing was achieved in 93.7% vs 47% of patients, and complete healing in 93.7% vs 33% in the main and control groups, respectively . Wound size decreased significantly faster in the fibroblast group: 0.9 cm^2 vs 3.3 cm^2 at 3 months, 0.4 vs 3.5 cm^2 at 6 months, and 0.1 vs 3.5 cm^2 at 12 months ($p<0.001$) . Time to granulation (8.5 vs 13.3 days) and epithelialization (13.3 vs 21.4 days) was significantly shorter ($p<0.05$) . The rate of major amputations was reduced from 12.1% to 3.4% (p=0.047), and repeated surgical interventions decreased from 41.4% to 22.4% .

Conclusion: The combined use of endovascular revascularization and allogeneic fibroblast therapy significantly improves wound healing outcomes, accelerates tissue regeneration, and reduces amputation rates. This approach provides a synergistic effect by restoring macro vascular perfusion and stimulating local regenerative mechanisms, making it a highly effective strategy for managing chronic ischemic wounds.

Poster

P14

Right Graft LDLT - MHV Reconstruction Is it Optional or Essential?

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Background: Venous outflow insufficiency remains a major, yet under-addressed, determinant of graft dysfunction in right lobe living donor liver transplantation (LDLT). Omission of middle hepatic vein (MHV) tributary reconstruction predisposes to segmental congestion, directly compromising graft viability. Despite this, the necessity of routine reconstruction continues to be inconsistently applied.

Aim: To critically evaluate the impact of MHV tributary reconstruction on early postoperative outcomes following right lobe LDLT.

Methods: A retrospective cohort study was performed including patients undergoing right lobe LDLT. Patients were stratified into two groups: those with MHV tributary reconstruction and those without. Reconstruction was performed using interposition grafts for V5 and/or V8 veins. Primary endpoints included early graft function, incidence of biliary complications, and overall postoperative morbidity.

Results: MHV reconstruction was associated with significantly improved early graft function, evidenced by accelerated normalization of liver enzymes and reduced biochemical markers of hepatocellular injury. Patients without reconstruction demonstrated a higher incidence of graft congestion and biliary complications, consistent with impaired venous drainage of anterior segments. Importantly, reconstruction did not result in increased vascular complications or clinically relevant operative burden.

Conclusion: Failure to reconstruct MHV tributaries in right lobe LDLT is associated with inferior early outcomes and avoidable graft dysfunction. Venous reconstruction should not be considered optional but rather an essential component of right lobe graft implantation when significant tributaries are present. These findings support a paradigm shift toward routine, physiology-driven venous reconstruction to optimize graft performance.

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Study of the Pathophysiological Role of Beta-Galactosidase in Kidney Transplantation. Preliminary Study

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In the organ transplantation process, senescent (aging/dormant) cells are a critical biological factor that directly affects the success of organs, especially those from older donors.

Objective: The aim of this prospective study was to investigate whether beta-galactosidase known as a senescence marker, could be a predictor of graft function in living kidney transplantation.

Materials and Methods: For this purpose, data from 7 kidney transplant patients were analyzed. Living donor nephrectomy was performed by video assisted mini lumbotomy incision with shorter warm ischemia time. Demographic, immunological, and tissue typing data, as well as ischemia times (warm and cold ischemia), were recorded. Preoperatively, beta-galactosidase levels in the donor's urine and recipient's blood were examined. After kidney transplantation, recipient's beta galactosidase levels in the first urine sample and simultaneously in the blood were investigated . These beta-galactosidase values were compared with ischemia times and postoperative day 1 blood creatinine levels.

Findings: The age range of the patients was 18-61 years. When examined by gender, males were more frequently observed. The results of pre- and postoperative beta-galactosidase level determinations are shown in Table 1. The table shows warm ischemia times, beta-galactosidase in preoperative blood and urine samples, and postoperative beta-galactosidase in blood (immediately after kidney perfusion) and urine (in the first postoperative urine sample). As seen in the table, a significant increase in beta-galactosidase in blood and urine samples was detected in patients with longer warm ischemia times. Conversely, although creatinine levels decreased, no significant correlation was found with ischemia times.

Conclusion: This preliminary study presents the initial results of our research. The significant correlation between beta-galactosidase levels and warm ischemia time (longer warm ischemia time leads to increased beta-galactosidase levels in blood and urine samples) suggests that this marker could be used as an ischemia predictor in future studies. We believe that the data we obtained may lead to a different perspective on ischemia-reperfusion and transplant pathophysiology in organ transplantation.

Table 1. Results of pre- and postoperative beta-galactosidase levels correlation with warm ischemia time

Sex	age	Warm ischemia time seconds	B gal preop 0.day serum pg/ml	B gal postop serum (pg/ml)	B gal preop 0.day urine pg/ml	B gal postop urine pg/ml	R cre preop 0.day mg/dl	R cre postop 1.day mg/dl
F	18	40	11.31	13,11	8,99	11,12	3,8	0,92
M	35	44	11,81	12,12	11,12	13,14	11,43	4,5
F	16	**80**	9,74	**16,8**	8,99	**17,12**	7,04	1,92
M	54	58	10,84	12,13	10,18	12,13	9,9	4,5
M	25	**70**	9,95	**15,12**	8,06	**15,12**	8,5	4,08
M	61	54	10,78	13,11	9	11,12	6,37	3,74
F	35	**100**	14,76	**25,14**	11,73	**17,11**	5,3	3,3

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Use of Platlate-Rich-Plasma to Protect of Ureterocystostomy in Kidney Transplant Recipient

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Background: Urological complications are one of the frequent problems after kidney transplantation, with urinary leakage being the most common early complication. The aim of this study was to investigate the effect of platelet-rich plasma (PRP) on the healing of ureterocystoanastomosis (UCA) in renal transplant recipients.

Materials and Methods: The method was applied in 30 recipients who underwent standard Lich-Gregoire UCA. Before the operation, 50 ml of the recipient's venous blood was placed in tubes with 3.8% sodium citrate and centrifuged for 10 minutes at a speed of 2400 rpm. After that, the middle layer formed in the tube (with leukocytes and platelets) was transferred to another tube for secondary centrifugation at a speed of 3600 rpm for 15 minutes. The prepared PRP was activated with a 10% calcium chloride solution to obtain a gel-like mass. The autoPRP-gel was applied to the recipient's ureterocystoanastomosis line during surgery.

Results: After the second centrifugation, the platelet concentration was $963.7 \pm 156.5 \times 10^9$/L, which was an average of 4.5 times higher than the initial level in the recipients' blood. In all 30 cases, there were no early urological complications such as UCA failure. The graft function remained satisfactory, and no re-anastomosis was required during or after surgery. In a retrospective comparison, 20% of the 30 patients in the control group without PRP had UCA failure with urinary leakage ($p=0.028$).

Conclusion: The use of PRP in urinary anastomoses is a simple, accessible, and cost-effective method for preventing UCA leaks after kidney transplantation.

P17

Are Surgical Technique and Donor Anatomical Incompatibility Directly Related During LDLT?

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Living donor liver transplantation (LDLT) accounts for nearly half of liver transplant procedures worldwide, primarily due to the shortage of deceased donor organs. Consequently, the use of living donor grafts has gained increasing importance, particularly in minimizing transplantation limitations associated with anatomical variations.

At the Liver Disease and Transplantation Center of Batumi University Hospital, a retrospective analysis was conducted of the anatomical (radiological) characteristics of grafts used in 175 LDLT procedures performed between 2014 and 2026. Additionally, radiological data from 145 potential donors who were excluded due to contraindications during the same period were evaluated.

Between 2014–2020, 87 transplants were performed, with 97 donors (67%) excluded due to contraindications. From 2020–2026, 88 transplants were completed, and exclusions decreased to 48 cases (33%), reflecting improved technical capability

In the earlier period, arterial anatomical contraindications included the presence of two or more arteries supplying the graft or a right hepatic arterial length of less than 10 mm. However, in the later period, successful implantation of dual arteries was performed in two cases (Type VI), and arterial anastomosis with a length <10 mm was successfully achieved in four cases. Notably, no arterial complications such as stenosis or thrombosis were observed. These findings suggest that multiple arterial supply should not be considered a contraindication when vessel size compatibility and surgical expertise are adequate.

At first grafts with portal vein trifurcation (Type B) or variants where the right anterior portal branch co-

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originated with the left portal vein (Type C) were not utilized. In contrast, during the later period, these anatomical variations were successfully managed through reconstruction using the recipient's portal vein branches. On the back table, a single central portal trunk was created, facilitating reduced anhepatic time and ensuring adequate portal inflow. Type B was successfully implanted in six cases, and Type III in four. Separate division of portal vein branches in the donor, followed by Y-graft reconstruction using the recipient's portal vein to create a single anastomotic orifice, proved to be an effective approach, particularly in right lobe LDLT with Type C anatomy.

In LDLT, the right lobe graft (segments V–VIII) is utilized in approximately 85–90% of cases, with the right hepatic vein serving as the primary outflow tract. However, in certain anatomical variants, the graft may present with multiple hepatic veins, where individual segments drain separately into the inferior vena cava (IVC). These include the right superior and inferior hepatic vein (segment VII & VI), and segmental branches from VIII and V. Earlier, such grafts were not used. Later, graft with four segmental veins, along with an additiona vein from segment I, was successfully transplanted. Reconstruction was achieved using a PTFE prosthetic graft to unify the venous outflow of segments VII–VIII and V–VI prior to implantation into the IVC, while the segment I vein was anastomosed separately.

In conclusion, findings suggest that many anatomical graft variations are not absolute contraindications. With increased surgical experience, technical expertise, and adherence to international standards, anatomically related donor exclusions can be reduced by up to twofold.

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Protective and Non-Protective Perfusion Rehabilitation of the Renal Allograft EX MORTUO under Modeling of an Asystolic Suboptimal Donor

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Objective. To substantiate the effectiveness of protective perfusion rehabilitation of a renal allograft EX MORTUO under conditions simulating an asystolic suboptimal donor.

Keywords: renal allograft, EX MORTUO, asystolic donor, perfusion rehabilitation, ischemic injury.

Conclusion: Protective perfusion rehabilitation is a more effective method for preserving renal allografts EX MORTUO and is recommended for use with asystolic suboptimal donors.

Introduction: The shortage of donor organs remains a critical issue in modern transplantation. Expanding the donor pool through the use of organs obtained after circulatory death is a promising strategy. The legally permitted retrieval of renal allografts EX MORTUO within 120 minutes after asystole necessitates a detailed understanding of the morphological and functional alterations occurring during this period. However, these processes remain insufficiently studied, limiting the effective use of such donors. In this context, the concept of an asystolic suboptimal donor is proposed, requiring mandatory perfusion rehabilitation of the organ prior to transplantation.

Materials and Methods: The study was performed on 39 mongrel dogs weighing 5–25 kg in accordance with international ethical standards for animal research. The animals were divided into two groups: Control group (n=15): non-protective hypothermic perfusion Main group (n=24): protective perfusion rehabilitation The protective protocol included: transorgan oxygen perfusion administration of pharmacological agents use of perfluorocarbon emulsion as an oxygen carrier Evaluations were conducted at 60, 90, and 120 minutes and included:

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light and electron microscopy morphometric analysis histoenzymatic studies assessment of lipid peroxidation products Statistical analysis was performed using Student's t-test ($p < 0.05$).

Results: Non-protective perfusion resulted in: diffuse parenchymal edema necrosis of tubular epithelium destruction of the brush border in proximal tubules cytoplasmic vacuolization and nuclear lysis mitochondrial damage narrowing of vascular lumens

Ultrastructural analysis revealed deformation of podocytes and irregular thickening of the basement membrane. In contrast, protective perfusion demonstrated: partial preservation of nephron architecture reduced severity of dystrophic changes stabilization of cellular membranes decreased lipid peroxidation activity Outcome measures: structural preservation: 86.7% (protective) vs 81.5% (non-protective) metabolic stability: 87.5% vs 86.6%

Discussion: The findings indicate that ischemic injury in renal allografts EX MORTUO is progressive and affects both structural and metabolic components of the nephron. Protective perfusion rehabilitation, combining hypothermia, oxygenation, and pharmacological support, promotes a hypobiotic state, reduces cellular energy deficit, and preserves antioxidant capacity. The use of perfluorocarbon emulsions enhances tissue oxygenation and reduces reperfusion injury, which is critical for successful transplantation outcomes.

Conclusion: Protective perfusion rehabilitation is more effective than non-protective methods in preserving renal allografts EX MORTUO. Its application: reduces ischemic damage maintains structural and functional integrity improves transplantation outcomes

This approach is justified for use with asystolic suboptimal donors.

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P19

Evolution of Kidney Replacement Therapy in Children with CKD G5 in Belarus: Trends, Access and Outcomes

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Introduction: Chronic kidney disease stage 5 (CKD G5) in children necessitates timely initiation of kidney replacement therapy (KRT), which critically influences survival and quality of life. In Belarus, as globally, the number of children requiring KRT is rising, highlighting the need to evaluate treatment strategies, transplant accessibility and transition to adult care.

Objective: to assess trends in incidence, prevalence, demographic characteristics, etiological structure, mortality and outcomes of KRT in children with CKD G5 in Belarus for the period 2010-2024.

Materials and Methods: The study included 206 children 0-17 years who started KRT before 1 January 2010 (cohort 1, n=45) and all subsequent new patients during the following periods 2010-2014 (cohort 2, n=56), 2015-2019 (cohort 3, n=52), 2020-2024 (cohort 4, n=53).

Results: Median age at KRT initiation was 11,7 (6,6; 15,6) years, boys predominated – 62%, estimated GFR, calculated according to the bedside Schwartz formula, – 8,9 (7,2; 11,1) (37% had <8 ml/min/1,73 m^2). Mean annual incidence of KRT remained stable: 5,8 (1); 6,3 (2); 5,6 (3); 5,7 (4) per million age-related population (pmarp) with a tendency toward an increase in the number of prevalent patients 22,4 (1); 29,5 (2); 30,7 (3); 32,2 (4) pmarp. The distribution of initial KRT modalities (hemodialysis (HD) /peritoneal dialysis (PD) / pre-emptive transplantation (Tx)) changed from 50%/46%/4% (2010-2014) to 43%/32%/25% (2020-2024). Median waiting time for transplantation decreased significantly over the study period: 23,2 months (9,7; 37,7) (1); 4,9 (2,1; 10,9) (2); 6,5 (3,0; 13,0) (3); 4,1 (1,4; 9,9) (4), $p_{1-2, 1-3, 1-4} < 0,001$. Graft survival rates at 1, 5 and 10 years were 95%, 84%, 79%, respectively. The leading causes of CKD were congenital anomalies of the kidney and urinary tract (44,2%) and glomerulonephritis (16,5%). As of December

31, 2024, 76% of children were living with a functioning graft, 11% had transitioned to adult services on dialysis, 9% had died, 4% remained on peritoneal dialysis, and 1% on hemodialysis.

Conclusions: In Belarus, the incidence of KRT in pediatric patients with CKD G5 aligns with the mean values of the ESPN/ERA Registry; however, the corresponding prevalence, while comparatively lower, exhibits a consistent pattern of increase. Over the past five years, waiting times for kidney transplantation have been substantially reduced to 4,1 months, the proportion of pre-emptive transplants has risen to 25%, and 84,2% of patients receive a transplant within one year of being placed on the waiting list.

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Impact of Variant Anatomy of Renal Arteries on Kidney Transplantation Outcomes

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We analyzed 339 cases performed in our institution from 2021 to the present. Among them, 270 patients (79.6%) had a single renal artery; in 67 cases (19.7%), reconstruction was performed using conjoined anastomoses with two renal arteries of different diameters; and in 2 cases (0.59%), anastomoses involved one main and three accessory arteries. In 1 donor (0.29%), a horseshoe kidney was detected; in 3 donors (0.88%), the renal artery diameter was up to 1 mm; and in another 3 potential donors (0.88%), scintigraphy showed less than 40% function. These findings served as contraindications for donor nephrectomy. The mean age of donors in the single-artery group was 29±10.3 years, whereas in the group with multiple renal arteries it was 34±10.7 years. Overall, accessory renal arteries were detected in 69 cases (20.4%). Surgical strategies for accessory arteries varied, and types of arterial revascularization were selected individually. The external iliac artery (EIA), internal iliac artery (IIA), and common iliac artery (CIA) were used.

Most donor nephrectomies were performed using an open surgical approach, while in 2 cases (0.59%) laparoscopic nephrectomy was performed. Among the identified accessory renal arteries, 42 (60.8%) were lower pole arteries, and 27 (39.1%) were upper pole arteries. Analysis of sex differences showed that accessory arteries occurred in 70% of men and 30% of women.

The mean follow-up period was 8 ± 3.1 months. Mean creatinine levels in the first months were 130 ± 25.1 mg/L in recipients with accessory arteries and 120 ± 27.4 mg/L in those with single arteries. The mean systolic blood pressure was 132.3 ± 23.8 mmHg. Postoperative complications included lymphorrhea in 2 recipients (0.59%) and hematoma in the graft bed in 3 recipients (0.88%),

requiring surgical intervention. No other complications, including urological ones, were observed. Graft survival was also analyzed according to the reconstruction method. Clinical and laboratory data in the long-term postoperative period showed that graft survival in patients with single and multiple anastomoses was 91% and 93%, respectively.

Conclusion: Based on the analysis, single renal arteries occur more frequently than non-classical anatomical variants. Among accessory artery variants, the lower pole type predominates, while the upper pole type accounts for 39.1% of cases among non-classical variants. The presence of accessory arteries significantly increases the complexity and duration of kidney transplantation. Preoperative determination of the number and location of renal arteries can help prevent unnecessary loss of renal function in the postoperative period.

Our results show that post-transplant hypertension and transplantation-related complications do not differ between patients receiving kidneys from donors with multiple renal arteries and those with single renal arteries. Based on these findings, accessory renal arteries significantly complicate kidney transplantation and require advanced technical approaches to ensure adequate revascularization of the organ. However, they are not a contraindication for donation.

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P21

Ultrasound Monitoring of Kidney Transplant Recipients: Prognostic Value of Point Shear Wave Elastography

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This prospective, single-centre, pilot study enrolled 20 adult recipients of living-related renal allografts who underwent scheduled outpatient or inpatient follow-up between 2024 and 2026. Inclusion criteria were: age 18–55 years, a functioning graft for at least 30 days post-transplantation, and provision of written informed consent. Patients were excluded if they had experienced an acute rejection episode during the observation period, were pregnant, or presented with a technically inadequate acoustic window. Participants were allocated to two groups of ten according to their serum biochemistry at the time of ultrasound examination. Group 1 (control) comprised recipients with serum urea < 15 mmol/L, creatinine < 150 μmol/L, and no clinical signs of graft dysfunction. Group 2 (study) comprised recipients with serum urea ≥ 15 mmol/L and/or creatinine ≥ 200 μmol/L, indicative of chronic allograft dysfunction. All ultrasound examinations were performed by a single experienced operator using an expert-class system in B-mode, pulsed-wave Doppler, and pSWE mode. Parenchymal stiffness was measured within a standardised region of interest (ROI) positioned at a depth of 1.5–4.0 cm; a minimum of five technically valid acquisitions were obtained per session, and the mean value was recorded in kilopascals (kPa). Additional parameters included longitudinal, transverse, and anteroposterior graft dimensions (mm), and the resistive index (RI) measured at the arcuate arteries. Statistical analysis was performed in Python 3.12 (SciPy 1.13). Continuous variables are expressed as mean ± standard deviation (M ± SD). Between-group comparisons were made using the Mann–Whitney *U* test; $p < 0.05$ was considered statistically significant. Correlation analysis was performed using Spearman›s rank correlation coefficient (*r*s). In Group 1, serum urea (7.53 ± 3.35 mmol/L) and creatinine (103.6 ± 24.5 μmol/L) were within normal reference ranges,

consistent with satisfactory allograft function. Mean parenchymal stiffness was 15.51 ± 2.96 kPa, the resistive index was 0.68 ± 0.08, and the mean longitudinal graft dimension was 116.0 ± 1.9 mm. Group 2 demonstrated significantly elevated serum urea (23.01 ± 7.72 mmol/L; $p = 0.003$) and creatinine (488.0 ± 34.49 μmol/L; $p = 0.002$). The wide standard deviation observed for creatinine in Group 2 reflects the heterogeneity of chronic dysfunction severity within this cohort. Parenchymal stiffness was significantly greater in Group 2 (27.90 ± 7.54 kPa; $p = 0.018$). The resistive index in Group 2 (0.71 ± 0.12) did not differ significantly from Group 1 ($p = 0.47$). Longitudinal graft dimension also showed no significant between-group difference (112.1 ± 8.4 mm vs. 116.0 ± 1.9 mm; $p = 0.19$). Spearman correlation analysis demonstrated a statistically significant positive association between pSWE-derived stiffness and serum creatinine ($rs = 0.61$; $p = 0.004$) and urea ($rs = 0.54$; $p = 0.014$). The correlation between pSWE and the resistive index was moderate and did not reach statistical significance ($rs = 0.29$; $p = 0.21$) These findings support the inclusion of pSWE in the routine ultrasound monitoring protocol for transplant recipients.

P22

Optimization of Vascular Reconstruction in Living Donor Kidney Transplantation with Vascular Anatomical Variability

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Background: Living donor kidney transplantation is the gold standard treatment for end-stage renal disease. However, vascular anatomical variability, including multiple renal arteries, accessory vessels, and short renal veins, significantly complicates surgical management and is associated with increased risks of vascular and urological complications. The absence of standardized reconstruction strategies necessitates the development of optimized, anatomy-based approaches to improve clinical outcomes.

Methods: A combined retrospective and prospective cohort study included 110 patients undergoing living donor kidney transplantation. The control group (n=50) received standard vascular reconstruction, while the study group (n=60) underwent optimized reconstruction based on detailed preoperative computed tomography angiography. Surgical techniques included arterial unification on the bench, Carrel patch application, Y-shaped vascular reconstruction, and venous extension using autovenous grafts when required. Primary endpoints were vascular and urological complications. Secondary endpoints included vascular anastomosis time, total ischemia time, and early graft function. Statistical analysis was performed using Student's t-test and χ^2 test, with significance defined as $p<0.05$.

Results: Vascular anatomical variations were identified in 38% of donors. The optimized reconstruction group demonstrated a significant reduction in vascular complications compared to the control group (4% vs 10%; p=0.041; RR 0.40; 95% CI 0.16–0.98). Urological complications were also reduced (3% vs 8%; p=0.048; RR 0.37; 95% CI 0.14–0.99), primarily due to preservation of lower pole arterial perfusion. The mean vascular anastomosis time decreased by 18% (32.5±6.2 vs 39.7±8.1 minutes; p=0.002), and total ischemia time was reduced by 15% (p=0.009). Early graft function was significantly

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improved, with lower serum creatinine levels on postoperative day 7 (p=0.01) and day 14 (p=0.015). Six-month graft survival was higher in the optimized group (96% vs 90%; p=0.047), while patient survival did not differ significantly (p=0.62).

Conclusion: Anatomy-based optimization of vascular reconstruction significantly reduces complication rates and improves early graft outcomes in living donor kidney transplantation. The implementation of standardized surgical algorithms guided by preoperative imaging is associated with improved operative efficiency and graft survival. These findings support the integration of personalized vascular reconstruction strategies into routine transplant practice.

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Perfusion Solution Targeting Mitochondrial Reverse Electron Transport and Ferroptosis for Hypothermic Oxygenated Machine Perfusion of Donor Organs

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Introduction: Hypothermic oxygenated machine perfusion (HOPE) reduces ischemia-reperfusion injury (IRI) in donor organ preservation; however, existing solutions were developed for static cold storage and fail to address two critical reperfusion mechanisms: mitochondrial reverse electron transport (RET) driven by succinate reoxidation, and ferroptosis — iron-dependent lipid peroxidation responsible for cholangiocyte and proximal tubular cell death. We developed and experimentally validated an 18-component perfusion solution specifically optimised for HOPE, with multitarget action across five IRI pathways.

Methods: The solution was designed on an extracellular electrolyte platform (Na^+ 100 mM, K^+ 5 mM) incorporating: a competitive RET inhibitor, mPTP stabiliser, antioxidant module, antiferroptotic module (high-affinity Fe^{3+} chelator + GPX4 cofactor), immunomodulator, and energy substrates. Physicochemical stability was confirmed over 7 days at 4°C. Validation was performed in 36 male Wistar rats using isolated perfused liver (n=18) and kidney (n=18) models. All groups underwent 30-minute warm ischemia (DCD conditions), 2-hour HOPE at 8–10°C, and 60-minute normothermic reperfusion. Endpoints: ALT and creatinine in perfusate, ferroptosis markers (4-HNE, GPX4 activity), functional parameters (bile production, GFR, FENa), and histology.

Results: In the liver model, the experimental solution reduced ALT by 76% vs. control (169±91 vs. 694±247 U/L, $p<0.05$) and increased bile production 2.4-fold (0.74±0.24 vs. 0.31±0.15 µL/min/g, $p<0.05$). The ferroptosis marker 4-HNE decreased more than 2-fold; GPX4 activity nearly

doubled. Suzuki score: 1[1–2] vs. 3[2–4]. In the kidney model, creatinine decreased 64% (121±46 vs. 334±97 μmol/L, $p<0.05$), GFR increased 3.2-fold, FENa remained below 1% (vs. 4.6% in controls), and KIM-1 and NGAL each fell more than 3-fold. ATN score: 2.4±1.2 vs. 7.8±2.1 ($p<0.05$). Comparable efficacy across both organs confirms action on universal IRI mechanisms.

Conclusion: The multicomponent perfusion solution demonstrated proof-of-concept for effective parenchymal organ protection during HOPE by simultaneously targeting RET-mediated oxidative burst, mPTP opening, ferroptosis, energy depletion, and endothelial dysfunction. The 2.4-fold improvement in bile production is directly relevant to DCD liver transplantation, where ischemic cholangiopathy reaches 20–30% with static cold storage. The comparable protection of liver and kidney supports the potential of this formulation as a universal solution for multi-organ procurement. Clinical translation in DCD and ECD transplantation is in preparation.

P24

Kidney Transplantation in Patients with Critical Pelvic Vascular Conditions

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Background: Kidney transplantation in patients with severe atherosclerotic lesions of pelvic vessels represents a significant surgical challenge. Advanced vascular calcification, stenosis, or occlusion of the iliac arteries complicates arterial anastomosis and increases the risk of graft thrombosis, delayed graft function, and limb ischemia. In such cases, standard transplantation techniques are often not feasible, requiring alternative vascular reconstruction strategies.

Methods: A retrospective-prospective study included 48 patients with end-stage renal disease and critical pelvic vascular pathology who underwent kidney transplantation. Preoperative assessment involved computed tomography angiography to evaluate the degree of vascular calcification and patency of iliac vessels. Patients were divided into two groups: standard approach (n=20) and complex vascular reconstruction group (n=28). Surgical techniques included endarterectomy of iliac arteries, use of vascular prostheses, arterial bypass (ilio-femoral or aorto-femoral), and anastomosis to alternative inflow sources such as the aorta or native renal vessels. Outcomes assessed included technical success, vascular complications, graft function, and limb perfusion.

Results: Severe pelvic vascular disease was confirmed in all patients, with diffuse calcification present in 62% and significant stenosis or occlusion in 38%. Complex vascular reconstruction enabled successful transplantation in 96% of cases. The rate of vascular complications was higher in the standard group compared to the reconstruction group (15% vs 7%; p=0.048). Early graft function was improved in the reconstruction group, with lower incidence of delayed graft function (18% vs 35%; p=0.041). Limb ischemia was observed in 10% of patients in the standard group and was absent in the reconstruction group (p=0.03). Six-month graft survival was significantly higher in the reconstruction group (93% vs 80%; p=0.045).

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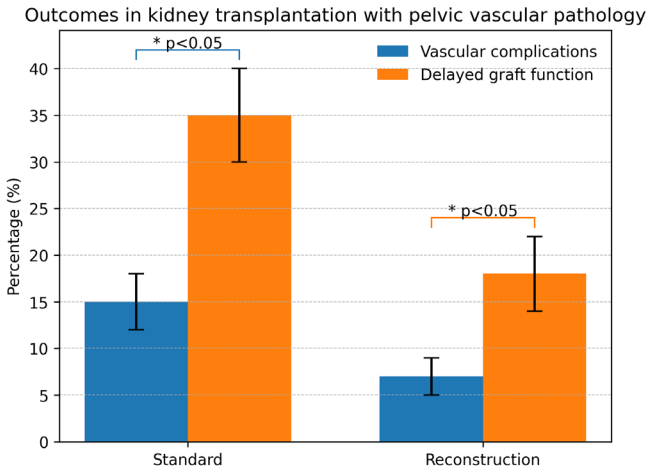
Conclusion: Kidney transplantation in patients with critical pelvic vascular conditions is feasible and safe when individualized vascular reconstruction strategies are applied. Preoperative vascular imaging and the use of alternative inflow techniques significantly reduce complications and improve graft outcomes. These findings support the development of standardized algorithms for managing high-risk recipients with severe pelvic vascular disease.

Figure 1



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A Four-Component Hepatic Artery Classification with 4D Flow MRI Integration for Reconstruction Planning İn Liver Transplantation

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Introduction: Existing hepatic artery classification systems — Michels (1966) and Hiatt (1994) — were developed before modern imaging and lack integration with surgical decision-making. Neither provides a structured framework for reconstruction planning, quality grading, or donor-recipient compatibility scoring, and neither incorporates hemodynamic data now accessible through 4D flow MRI. We developed the Hepatic Artery Coding System (HACS) — a four-component standardised classification integrating anatomy, vessel quality, segmental perfusion, and hemodynamic parameters — as a comprehensive tool for preoperative planning and intraoperative decision support in liver transplantation.

Methods: HACS encodes hepatic arterial anatomy in a structured format: [Origin]-[Anatomy]-[Quality]-[Segments]. The Origin component identifies arterial source vessels (letter code). The Anatomy component describes configuration of common, right, left, and middle hepatic arteries using a four-digit code (0=absent, 1=normal, 2=replaced, 3=accessory). The Quality component (A–D) grades vessel diameter and wall status. The Segmental component maps perfusion adequacy across all eight Couinaud segments. A Reconstruction Complexity Score (0–10) and Compatibility Index (0–100) are derived algorithmically. For hemodynamic validation, 4D flow MRI (3T, respiratory-navigated; velocity encoding 100–150 cm/s) quantified peak systolic velocity, wall shear stress, and flow asymmetry index across hepatic arterial variants. HACS codes were assigned prospectively to donor-recipient pairs with intraoperative and 30-day outcome recording.

Results: Classical normal anatomy was coded

C-1110-A-11111111 (Complexity Score 2, Compatibility Index ≥97). Replaced right hepatic artery from SMA: S-1210-B-11111111 (Score 4, CI 83) — branch patch technique recommended. Dual replaced anatomy: S,G-1220-C-11111111 (Score 8, CI 72) — microsurgical technique or jump graft indicated. 4D flow MRI identified hemodynamically significant flow asymmetry in replaced hepatic arteries not detectable by CTA alone: peak systolic velocity discrepancy >35% between dominant and accessory vessels correlated with the intraoperative decision to reconstruct rather than ligate the second artery. Wall shear stress mapping revealed zones of elevated turbulence at planned anastomotic sites in high-complexity cases, enabling preoperative technique modification. Postoperative monitoring was stratified by complexity score: low-risk (0–3) — Doppler on days 1/3/7; moderate (4–6) — daily Doppler ×5 then CTA days 7–10; high-risk (7–10) — twice-daily Doppler ×3 days and CTA days 3–5 and 10–14.

Conclusion: HACS provides a reproducible framework directly linking anatomical description to surgical decision algorithms — a gap unaddressed by Michels and Hiatt systems. Integration of 4D flow MRI adds a hemodynamic dimension to conventional morphological coding, enabling preoperative identification of functionally significant flow asymmetry and anastomotic risk zones. The Compatibility Index offers a quantitative tool for donor-recipient pair optimisation under organ scarcity conditions. Prospective multicentre validation is in progress.

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Algorithm Based Vascular Reconstruction in Living Donor Kidney Transplantation with Variant Renal Vascular Anatomy

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Background: Vascular anatomical variability of the renal graft remains a major challenge in living donor kidney transplantation, increasing the risk of technical complications and impaired graft function. Despite numerous surgical techniques, the choice of reconstruction strategy is often empirical, and standardized decision-making algorithms are lacking. This study aimed to develop and evaluate an algorithm-based approach to vascular reconstruction considering anatomical and hemodynamic factors.

Methods: A prospective study included 60 patients undergoing living donor kidney transplantation with confirmed vascular anatomical variability. Preoperative assessment using computed tomography angiography was combined with intraoperative evaluation of vessel diameter, length, and spatial configuration. Based on these parameters, an original algorithm for vascular reconstruction was applied, incorporating criteria for arterial unification, selective reconstruction of polar arteries, and venous extension techniques. Hemodynamic adequacy of reconstruction was assessed intraoperatively using Doppler ultrasound. Outcomes were compared with a historical control group (n=50) treated with conventional techniques.

Results: Application of the algorithm-based approach resulted in a significant reduction in vascular complications (4% vs 10%; p=0.039; RR 0.40; 95% CI 0.15–0.97). Urological complications related to ureteral ischemia decreased from 8% to 3% (p=0.045), due to targeted preservation of lower pole arterial perfusion. The algorithm allowed optimization of surgical decision-making, reducing unnecessary reconstruction of small-caliber vessels while ensuring adequate graft perfusion. Mean vascular anastomosis time decreased (33.1±6.0 vs 40.2±7.5 minutes; p=0.001), and total ischemia time was

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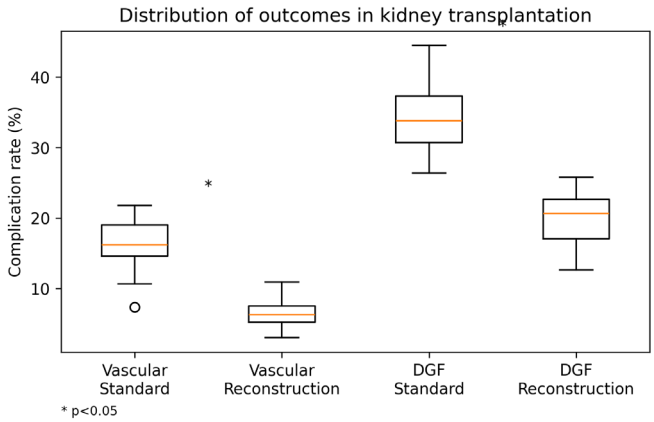
significantly reduced (p=0.007). Intraoperative Doppler assessment confirmed improved hemodynamic stability with more uniform perfusion of graft segments. Early graft function was significantly better, with lower serum creatinine levels on postoperative days 7 and 14 (p<0.05). Six-month graft survival improved (96% vs 90%; p=0.048).

Conclusion: The implementation of an algorithm-based, hemodynamically guided approach to vascular reconstruction significantly improves outcomes in kidney transplantation with variant vascular anatomy. This strategy enables individualized surgical planning, reduces complication rates, and enhances graft perfusion. The proposed algorithm may serve as a foundation for standardizing vascular reconstruction in transplant practice.

Figure 1



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Predictive Algorithm for Respiratory Failure in Abdominal Compartment Syndrome after Living Donor Liver Transplantation

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Background: Respiratory failure is a major complication following living donor liver transplantation, particularly in patients with abdominal compartment syndrome (ACS). Elevated intra-abdominal pressure (IAP) leads to diaphragmatic dysfunction, impaired lung mechanics, and increased risk of postoperative respiratory complications. However, early prediction and prevention strategies remain insufficiently developed. This study aimed to develop a predictive algorithm for respiratory failure in patients with ACS after liver transplantation.

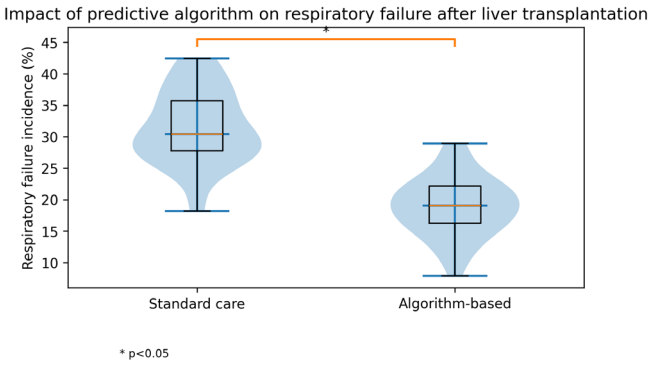
Methods: A combined retrospective and prospective study included 150 patients who underwent living donor liver transplantation. Intra-abdominal pressure was measured using standardized techniques, and respiratory parameters including tidal volume, lung compliance, and oxygenation index were assessed. A predictive model was developed based on key risk factors, including IAP level, duration of surgery, fluid balance, and need for vasopressor support. Patients were stratified into risk groups, and an optimized management protocol was applied in the prospective cohort. Outcomes were compared with a control group treated with standard postoperative care.

Results: Respiratory failure developed in 28% of patients with ACS. Independent predictors included IAP >20 mmHg (p=0.002), prolonged operative time (p=0.01), and positive fluid balance (p=0.008). Implementation of the predictive algorithm allowed early identification of high-risk patients and reduced the incidence of respiratory failure (18% vs 32%; p=0.037; RR 0.56; 95% CI 0.34–0.91). The need for prolonged mechanical ventilation decreased (p=0.041), and reintubation rates were lower in the intervention group (p=0.045). ICU stay was also significantly reduced (p=0.02).

Conclusion: The proposed predictive algorithm for respiratory failure in patients with abdominal compartment

syndrome after liver transplantation enables early risk stratification and targeted intervention. Integration of intra-abdominal pressure monitoring and respiratory parameters into postoperative management significantly improves outcomes and may represent a new standard in perioperative care.

Figure 1



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Systemic Development of Post-Mortal Transplantation: Problems, Need and Strategic Guidelines

Kanat Mamakeev Mambetovich, Zhanybek Ashimov Isabekovich, Adilet kadyrov Kaparovich, Batyrkhan Niyazov Sabitovich, Muratbek Rysbekov Toygonbaevich, Taalay Akmatov Amankulovich

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Introduction: The current state of transplant medicine in the Kyrgyz Republic is characterized by a predominance of living related donation, primarily for kidney transplantation, and more recently, liver and bone marrow transplantation. Despite positive clinical results, this model does not provide a systemic solution to the shortage of donor organs and limits access to life-saving treatment for patients with terminal organ failure (in the absence of a "suitable" related donor). At the same time, reliance on living donors gives rise to bioethical contradictions associated with the risk of harm to a healthy person, necessitating the search for a more sustainable and ethically consistent model for the development of transplant services.

Target: To justify the need for a strategic transition of the transplant system of the Kyrgyz Republic to the development of posthumous multi-organ donation (MOD) programs as a more effective, ethically justified and socially significant model for meeting the population's need for organ transplantation.

Discussion: Bioethical analysis shows that living donation, while life-saving for the recipient, is associated with a potential violation of the principle of non-maleficence , as it involves medical intervention on a healthy individual. Posthumous donation reconciles the principles of beneficence and non-maleficence, minimizing risk to living individuals while simultaneously increasing access to transplantation.

The "ends-means-results-consequences" conceptual model demonstrates that the evaluation of transplant technologies must consider not only the immediate clinical outcome but also the long-term medical and moral consequences. In this context, deceased donation provides a more balanced solution to the problem of organ shortage.

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International experience shows that effective transplant systems are based on institutionalized mechanisms for posthumous donation, including legislative regulation, national donor registries, coordination centers, professional training of specialists, and building public trust in the healthcare system. The absence of these elements limits the development of transplantation as a tool of public health policy.

Conclusions: The strategic development of transplant services in the Kyrgyz Republic requires a transition from predominantly related donation to an institutionally organized system of posthumous multi-organ donation. Implementation of this model requires improving the regulatory framework, creating an infrastructure for MOD programs, and fostering a culture of public solidarity regarding organ donation.

Prioritizing posthumous donation will increase access to high-tech medical care, reduce ethical risks for living donors, and ensure the sustainable development of transplantation in accordance with international standards of efficiency and fairness.

Key words: Posthumous donation, multiple organ donation (MOD), organ transplantation, bioethics, medical ethics, donor registry, transplant service, public trust

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Human Fetal Liver Stem Cell Therapy as a Bridge to Liver Transplantation in Patients with Advanced Cirrhosis

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Background: Liver transplantation (LT) remains the only definitive treatment for end-stage liver disease. However, increasing waitlist mortality and limited donor availability highlight the need for alternative supportive therapies. Human fetal liver–derived stem cells (FLSCs) have demonstrated regenerative and immunomodulatory potential in preclinical and early clinical studies.

The present study aimed to evaluate the safety and short-term efficacy of FLSC transplantation in patients with advanced liver cirrhosis awaiting liver transplantation.

Patients and Methods: A total of 158 patients with liver cirrhosis of various etiologies who were listed for liver transplantation were included in this study. Patients were divided into two groups:

- FLSC therapy group
- Control group (no cell therapy)

FLSCs were obtained following medically indicated pregnancy termination and were administered via peripheral infusion.

Clinical and biochemical liver function parameters, including Child–Pugh score, Model for End-Stage Liver Disease (MELD) score, serum bilirubin, and INR, were assessed during follow-up. Outcomes were evaluated up to 6 months.

Results: At 90 days, the FLSC-treated group demonstrated significant improvement in Child–Pugh scores compared with baseline. MELD scores remained stable in treated patients, whereas they increased during follow-up in the control group.

Serum bilirubin levels decreased in the treatment group during the first 60 days but increased among controls.

Differences in INR between groups reached up to 10% during early follow-up.

However, these improvements did not persist beyond 90 days. At 6 months, a modest decrease in mean MELD score was observed in treated patients. Overall, clinical and biochemical parameters demonstrated transient improvement following FLSC therapy.

Conclusion: Peripheral infusion of human fetal liver–derived stem cells appears to improve liver function parameters in patients with advanced cirrhosis during the first 90 days following treatment. However, the effect was not sustained beyond the early follow-up period.

Larger, controlled studies are required to better define the role of FLSC therapy as a bridge to liver transplantation in patients with end-stage liver disease.

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Prognostic Value of Nirs-Liver in Early Postoperative Monitoring after Living Donor Liver Transplantation

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Background: Liver transplantation is the standard of care for patients with end-stage liver disease. In the Republic of Uzbekistan, transplantation is performed exclusively from living related donors, providing advantages in histocompatibility and elective surgical planning. However, living donor liver transplantation (LDLT) is associated with a relatively high incidence of vascular complications, averaging 13–14% and reaching up to 20–25% in some reports. These complications significantly impact graft function and remain a major cause of early allograft dysfunction.

Near-infrared spectroscopy (NIRS) represents a promising non-invasive modality for continuous monitoring of tissue oxygenation, including liver graft perfusion in the early postoperative period.

Materials and Methods: The study included 124 patients (72 males and 52 females, mean age ~40 years) who underwent orthotopic liver transplantation. NIRS monitoring was performed using the NONIN SenSmart X-100 device with a liver-specific function. The sensor was placed over the graft projection under ultrasound guidance. Continuous monitoring of $LSrO_2$ was conducted for 48 hours postoperatively.

Ultrasound assessment of hepatic blood flow was performed every 6 hours, while biochemical and hematological analyses were conducted every 12 hours. Hemodynamic parameters, including arterial blood pressure, heart rate, blood gas analysis, and urine output, were also recorded. Statistical analysis was performed using SPSS 26.0. Correlations were assessed using Pearson and Spearman methods, with statistical significance defined as $p < 0.05$.

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Results: The overall incidence of vascular complications was 21.8% (27 cases). Arterial complications were the most frequent (12.9%), including early hepatic artery thrombosis (4.8%), late thrombosis (1.6%), and early stenosis (3.2%). No cases of late hepatic artery stenosis were observed.

Among venous complications, late portal vein stenosis was the most common (2.4%), while early portal vein thrombosis occurred in 1.6% of patients. Postoperative bleeding was observed in 4.8% of cases.

Correlation analysis demonstrated that hemoglobin level was the most significant factor, showing a positive correlation with $LSrO_2$ at all time points, with the strongest association at 24 hours ($r = 0.507$; $p < 0.0001$). Platelet count showed a significant positive correlation at 48 hours ($r = 0.401$; $p = 0.0001$), potentially reflecting microcirculatory recovery. Lactate level demonstrated an inverse correlation at 24 hours ($r = –0.329$; $p = 0.002$), indicating sensitivity of NIRS to tissue hypoxia.

Hepatic artery flow velocity correlated positively with $LSrO_2$ ($r = 0.328$; $p = 0.002$ at 24 hours; $r = 0.248$; $p = 0.023$ at 48 hours). Resistive index (RI) showed a positive correlation at 3 hours ($r = 0.350$; $p = 0.001$). No significant correlations were observed between $LSrO_2$ and biochemical markers (ALT, AST, bilirubin, albumin), coagulation parameters (INR, PTI, APTT), or systemic hemodynamic variables.

Conclusions: NIRS-liver is an effective non-invasive tool for monitoring liver graft oxygenation after living donor liver transplantation. The most significant predictors of $LSrO_2$ are hemoglobin level, hepatic artery blood flow velocity, platelet count, and lactate level.

The incidence of vascular complications was 21.8%, with arterial complications predominating (12.9%). NIRS monitoring enables early detection of perfusion disturbances and may serve as an additional predictive tool in the comprehensive assessment of graft function.

Implementation of NIRS-liver in clinical practice may improve the quality of postoperative monitoring and contribute to better transplantation outcomes.

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Use of autovenous graft for portal reconstruction in a child with hepatoblastoma during related liver transplantation

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Introduction: In the case of hepatoblastoma with invasion into the vessels of the portal vein, widespread thrombosis of the portal vein, tumor resection is impossible. And the only treatment in such cases is liver transplantation

Materials and methods: In our center, we performed the first liver transplantation from a living related donor to a child diagnosed with hepatoblastoma of the liver, fetal epithelial variant without signs of metastasis. Pretext IV. C1E0F1H0M0N0P2V3. A 5-year-old boy weighing 15 kg received a course of polychemotherapy. During examination, AFP reached 22684 IU/ml. After chemotherapy before surgery, AFP decreased to 16 IU/ml. Ultrasound of the abdominal organs showed signs of a space-occupying lesion in the right lobe of the liver, cavernous transformation of the portal vein, hepatosplenomegaly, and diffuse focal changes in the liver. Computed tomography of the abdominal cavity showed signs of liver space-occupying lesions with signs of invasion into the inferior vena cava. Cavernous transformation of the portal vein. Hepatosplenomegaly, dilatation of intra- and extrahepatic bile ducts.

Transplantation of 2-3 liver segments from a living related donor was performed. During the operation, extensive thrombosis of the portal vein was detected in the recipient, and thrombectomy was performed. To lengthen and perform a portal anastomosis, a venous graft from the external jugular vein on the left, 3 cm long, was taken from the recipient. Due to the impossibility of performing a portal anastomosis directly with the native portal vein of the recipient due to multiple vascular transformation, an anastomosis was performed between the portal vein of the donor liver and the superior mesenteric vein the recipient using

his own graft from the external jugular vein. Arterial anastomosis was performed end-to-end. The bile ducts are connected using a Roux-en-Y hepaticojejunostomy. For immunosuppressive therapy, he received: glucocorticoids i/v, prograf per os.

Results: In the early postoperative period, against the background of satisfactory liver graft function, a decrease in liver transaminases, bilirubin, and AFP was noted. On control ultrasound with Doppler sonography, the blood flow in the vessels is satisfactory, the liver transplant is without any features.

Conclusions: Despite the pronounced vascular transformation of the portal vein with partial thrombosis of the portal vein in the recipient, we consider the use of a native vascular graft from the external jugular vein of the recipient himself to form a portoportal anastomosis to be the optimal solution in such situations.

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Use of Fetal Stem Hepatocytes FR Liver Cirrhosis Resulting From Chronic Hepatitis C

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Liver cirrhosis resulting from chronic hepatitis C (HCV) remains a major global health challenge due to its progressive course, high morbidity, and limited capacity for tissue regeneration despite effective antiviral therapy. The persistence of fibrosis after viral eradication necessitates the development of novel therapeutic approaches aimed at restoring liver structure and function. In this context, fetal stem hepatocytes (FSH) represent a promising tool of regenerative medicine due to their high proliferative activity, differentiation potential, and immunomodulatory properties.

The aim of this study was to evaluate the clinical and biochemical effectiveness of FSH transplantation in patients with liver cirrhosis caused by chronic hepatitis C. The study included 30 patients aged 18–65 years with cirrhosis of varying severity classified according to Child-Pugh and MELD scores. All patients received standard antiviral therapy (sofosbuvir + daclatasvir) and supportive treatment according to national clinical protocols. The main group additionally underwent FSH transplantation according to an approved protocol. Clinical, biochemical, and elastographic assessments were performed before treatment and after six months.

The results demonstrated a positive effect of FSH therapy on both laboratory and clinical parameters. A statistically significant decrease in total bilirubin levels by 54.6% ($p = 0.048$) was observed in the main group, indicating improved hepatic excretory function. Total protein levels increased by 9.1% ($p = 0.020$), reflecting restoration of synthetic liver function. Improvements were also noted in gamma-glutamyl transferase levels (–35.4%, $p = 0.048$)

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and fibrinogen (+10%, p = 0.045). Although reductions in ALT and AST levels were observed, these changes did not reach statistical significance (p > 0.05).

Clinically, patients in the main group exhibited significant regression of asthenic and cholestatic syndromes. Weakness decreased from 96.0% to 40.0%, fatigue from 52.0% to 8.0%, and drowsiness was completely eliminated (p < 0.001). Cholestasis manifestations also significantly declined: pruritus decreased from 28.0% to 4.0% (p = 0.014), and jaundice from 52.0% to 12.0% (p = 0.002). Signs of portal hypertension, including abdominal enlargement, decreased from 40.0% to 8.0% (p = 0.011). In contrast, the control group demonstrated minimal or statistically insignificant improvements.

Assessment using prognostic scales showed a significant improvement in Child-Pugh scores in the main group (from median 7 to 6 points, p = 0.006), while MELD score reduction did not reach statistical significance (p = 0.099). These findings suggest stabilization and partial improvement of liver function.

In conclusion, fetal stem hepatocyte transplantation demonstrates significant potential as an adjunctive therapy for liver cirrhosis associated with chronic hepatitis C. It contributes to the improvement of biochemical parameters, reduction of clinical symptoms, and partial restoration of liver function. However, further large-scale studies with longer follow-up are required to confirm long-term efficacy and safety.

Figure 1

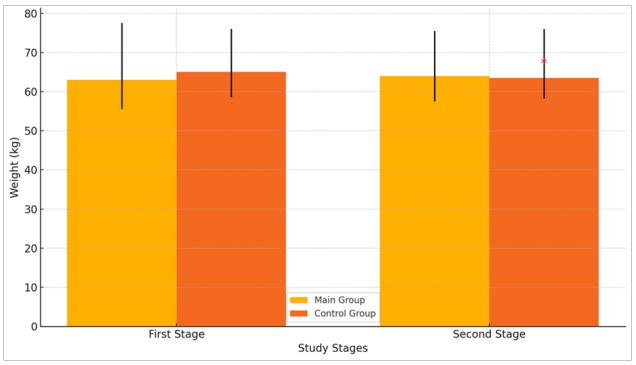
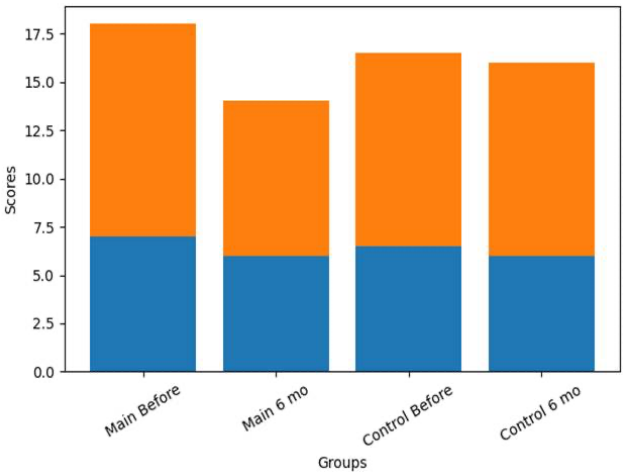


Figure 2



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Evaluation of the Effectiveness of the SPAD (Single-Pass Albumin Dialysis) Method in the Treatment of Liver Failure

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Introduction: Liver failure remains a life-threatening condition with limited therapeutic options. Extracorporeal liver support systems, including single-pass albumin dialysis (SPAD), are used as bridging therapies to transplantation or liver recovery.

The aim of study is evaluating the clinical and biochemical effectiveness of SPAD in patients with liver failure. The results demonstrate a significant reduction in bilirubin, ammonia, creatinine, and urea levels after SPAD sessions, along with partial improvement in metabolic parameters. SPAD may serve as an effective supportive modality in critically ill patients with hepatic dysfunction.

Materials and Methods: A prospective observational study was conducted on patients with liver failure who underwent SPAD therapy. Inclusion criteria included elevated bilirubin levels, hepatic encephalopathy, and signs of systemic intoxication. SPAD sessions were performed using standard hemodialysis equipment with an albumin-containing dialysate. The following parameters were assessed before and after treatment: Total bilirubin, Direct bilirubin, Creatinine, Urea, Alanine aminotransferase (ALT), Aspartate aminotransferase (AST).

Results: After SPAD therapy, a significant decrease in biochemical markers was observed: total bilirubin decreased by 25–45%, Creatinine and urea showed moderate reduction (15–30%), ALT and AST demonstrated a downward trend, reflecting partial hepatocellular recovery. Clinical improvement included reduced severity of hepatic encephalopathy and stabilization of hemodynamic parameters in a subset of patients.

Conclusion: SPAD is an effective extracorporeal liver support technique that significantly improves biochemical parameters and clinical condition in patients with liver failure. It represents a promising bridge therapy in critically ill patients awaiting liver recovery or transplantation.

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Author Index

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*Wager E, Kleinert S. (2011) Responsible research publication: international standards for authors. A position statement developed at the 2nd World Conference on Research Integrity, Singapore, July 22-24, 2010. Chapter 50 in: Mayer T & Steneck N, eds. Promoting Research Integrity in a Global Environment. Singapore: Imperial College Press / World Scientific Publishing; 2011:309-16.

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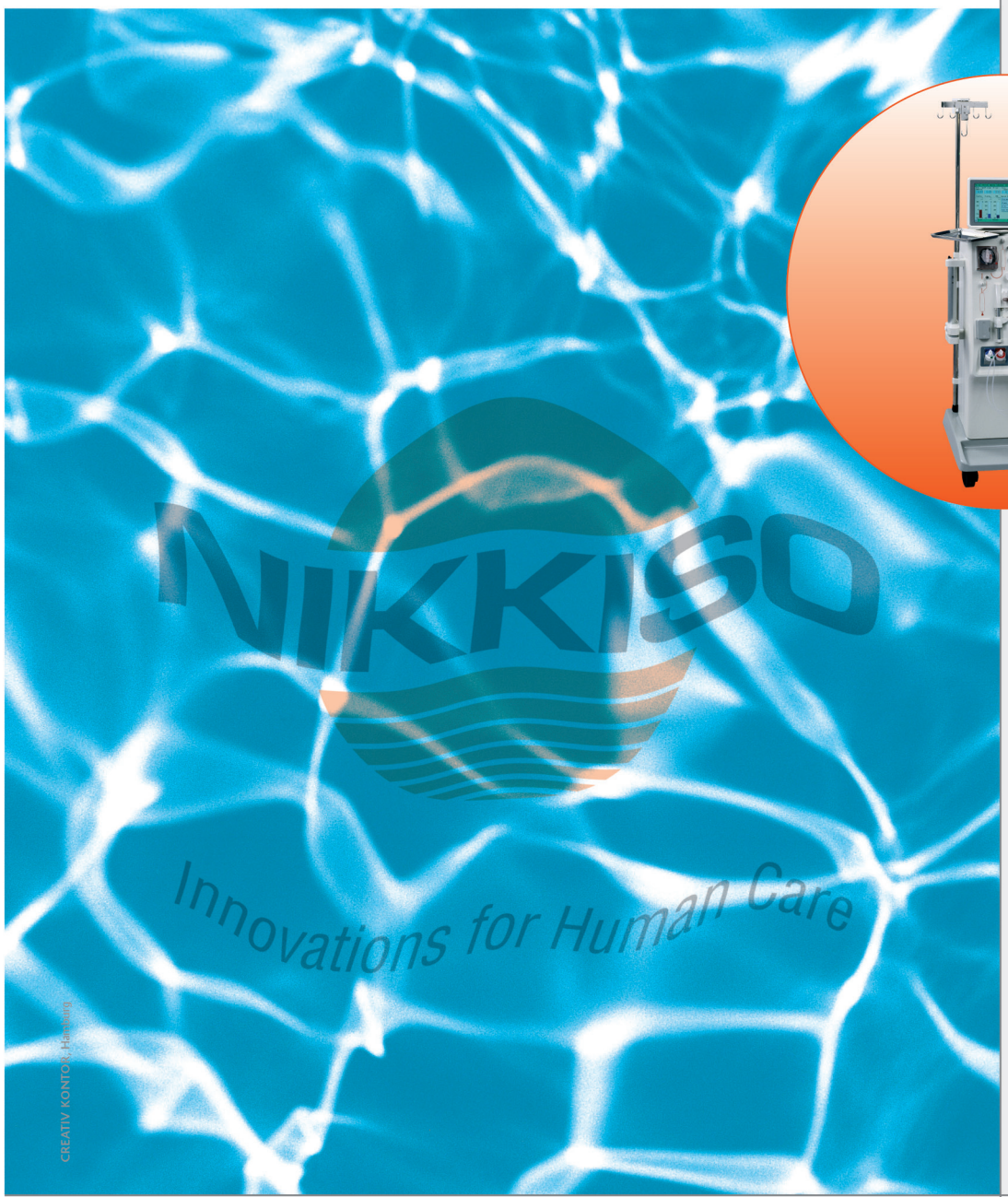

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