

Project title, IN	AP09260122 - Staged desensitizing therapy for complex preoperative preparation of candidates for organ (liver/kidney) transplantation with high immunological risk
Implementation time	01.03.2021 – 31.12.2023
Scientific supervisor of the project	Abdrahmanova Saniya Alishevna - candidate of medical sciences
Scientific novelty and significance of the project	<p>Organ (liver/kidney) transplantation is the only radical treatment for patients with end-stage kidney/liver disease. According to the "Republican Center for the Coordination of Transplantation and High-Tech Medical Services" of the Ministry of Health of the Republic of Kazakhstan, in August 2020, 2,700 people were registered on the waiting list for kidney transplantation²⁰. This figure does not include the large cohort of patients diagnosed with Stage 4-5 Chronic Kidney Disease (CKD) who have not started kidney replacement therapy (dialysis). This group of patients is not yet on the waiting list, but they are eligible for kidney transplantation. Given the limited epidemiological data, general lack of awareness, and often inadequate access to laboratory services, such numbers are likely to underestimate the actual problem that kidney and liver diseases are.</p> <p>Patients with end-stage kidney/liver disease with a history of repeated pregnancies, blood transfusions, and organ/tissue transplants belong to the cohort of patients at high immunological risk⁸. Highly sensitized transplant candidates face limited access to donor organs due to their high immunological risk. Sensitization is one of the main obstacles to the successful outcome of transplantation, often leading to antibody-mediated rejection. The adoption of desensitizing protocols increases the chances of this patient cohort for a successful transplant outcome.</p> <p>The development and implementation of an adapted protocol for complex preparation (desensitization) and postoperative monitoring of recipients with a high immunological risk will increase the chances of highly sensitized candidates for transplantation, selection of compatible donors. Also, it will reduce the risk of graft rejection, increase graft survival time, and reduce mortality in patients with terminal liver/kidney diseases.</p>
Aim of the project	To evaluate the effectiveness of desensitizing protocols in the complex preparation of candidates for transplantation, which will lead to an increase in the pool of donors for highly sensitized recipients.
Expected results	<ol style="list-style-type: none"> 1. Reducing the immunological risk in patients on the waiting list and candidates for transplantation with an intravital and posthumous donor 2. Reducing the risk of hyperacute and acute rejection in renal/liver transplant recipients 3. Improvement of graft and recipient survival rates after liver/kidney transplantation 4. Publication of 3 articles in an international journal (impact factor 0.5-5.0; target journals Transplant International (impact factor-3.177, cite score percentile - 70) Transplantation Proceedings (impact factor-0.784. Cite

score percentile-40%; Transplantation Reviews (impact factor-3.262. cite score percentile 81%)

5. Publication of the article in editions recommended by CQAES MES RK (target journals – Clinical Medicine of Kazakhstan, Astana Medicine Journal)
6. Based on the principles of evidence-based medicine as a result of the proposed project, the development, and implementation of a protocol for desensitization of kidney/liver recipients into the national protocols for kidney/liver transplantation
7. Development and publication of a methodological manual on desensitization of candidates for organ transplantation with high immunological risk
8. Conducting training seminars among transplant doctors on the effectiveness of the use of desensitizing protocols for a group of patients with high immunological risk.

Project participants

Scientific supervisor of the project:

Abdrahmanova Saniya Alishevna - "Research and Production Center for Transfusiology", Chairman of the Board.

Investigators:

Spatayev Zhanat Seitbatallovich - LLP "National Research Oncology Center", Head of the Department of Liver Transplantation and Hepatopancreatobiliary Surgery.

Zheksembayev Asan Aitmukashevich - LLP "National Scientific Oncological Center", Department of liver transplantation and Hepatopancreatobiliary surgery - surgeon.

Asykbayev Mels Nurseitovich - LLP "National Research Oncology Center", Head of the center of urology, nephrology and kidney transplantation.

Abdugafarov Saitkarim Abdugapirovich - LLP "National Research Oncology Center" Department of urology, nephrology and kidney transplantation – surgeon-transplantologist.

Saparbay Jamilya Zhumabekovna - LLP "National Research Oncology Center", Head of Science Department.

Turganbekova Aida Askarkyzy - "Research and Production Center for Transfusiology" Head of the Laboratory of Immunological Tissue Typing.