

# The First Experience of Kidney Transplantation in the Clinical Hospital of Almaty

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**Abstract:** *To estimate results of kidney transplantation in city clinical hospital No. 7 of Almaty Analysed 100 patients who underwent kidney transplantation in our institution; male - 54 (54%), female - 46 (46%), age from 14 till 58 years (39 ± 10,3). 91 cases were performed by hand - assisted laparoscopic nephrectomy (HALD) and in three cases - open method (2 mini-lumbotomy and 1 pararectal access)*

**Keywords:** renal failure, transplantation of a kidney, donor, recipient, postoperative period, complications

## INTRODUCTION

One of the main reasons for the small number of patients with renal transplants terminal chronic renal failure (ESRD) is a limited number of donors (1, 3, 6, 7, 9, 10, 13). In Kazakhstan today on a number of ethical and social problems, organ transplants from brain dead donors is at the stage of its development and formation. On this basis, our clinic has sufficient experience kidney transplants from living mostly related donor.

Transplantation of a kidney from a living donor compared to cadaveric donation is associated with better early and late survival rates of recipients and the consequence of this prolonged graft function [2, 3, 4, 8, 11, 15]. According to the literature, the five-year survival rate of patients with renal transplants, and live and cadaveric donation are respectively 90% and 80% [3, 5, 12, 14, 15, 16].

The widespread introduction of the world endovideosurgery created the preconditions for the possibility of using the method of laparoscopic live donor nephrectomy in what was the first time in the world performed Ratner LE et al., 1995 [15].

In the Republic of Kazakhstan for 2013 more than 3,000 patients in need of kidney transplantation. For 2012 in the country it was performed 57 kidney transplants, 56 of them from a living donor and cadaveric donors by 2; for 2013 in the country performed 141 kidney transplants, one in 10 cases from donors with brain death.

More attention should be paid to the problems of improving the legislative framework, including the legal, organizational and ethical aspects of organ donation and transplantation; effective development of domestic medical science, the introduction of common standards and approaches to the provision of transplantological assistance, training of qualified specialists, using the best international practices.

In order to provide the population of the Republic of Kazakhstan medical organ transplantation in accordance with the real needs and donor resources should be organized a posthumous donation and transplantation of cadaveric kidneys.

The Department of Transplantation city hospital №7 Almaty in May of 2012 for January 2014 was performed 100 kidney transplants (94 cases from a living related donor and 6 cases from the donor to the death of the brain).

## OBJECTIVE

To evaluate the results of renal transplantation during the transplant operation department of City Clinical Hospital №7 Almaty.

## MATERIAL AND METHODS

The analysis of case histories of 100 patients with terminal chronic renal failure, which from May 2012 to January 2014 in the Department of Transplantation city hospital №7 Almaty had a kidney transplant. Among the recipients was 54 (54%) men and 46 (46%) of women aged 14 to 58 years (mean age 39 ± 10,3 years). Among the donors was 51 men and 49 women aged from 18 to 65 years (mean age 39,8 ± 10,5 years).

All recipients and donors to be screened according to protocols, including compatibility of blood group, HLA-typing and cross-match. All recipients of kidneys had significant cardiac and systemic problems have been eliminated diseases that could worsen the condition on immunosuppressive therapy in the postoperative period, all patients consulted a psychiatrist evaluated patients' adherence to therapy. Also excluded severe disease that could complicate the implantation of donor kidneys and their subsequent reperfusion quality.

Our data are collected retrospectively. Glomerular filtration rate was estimated using the formula Modification of Diet in Renal Disease (MDRD 4). The diagnosis of acute rejection was based on clinical and histologic criteria.

Chronic glomerulonephritis prevailed in nosology, leading to ESRD in 81 patients, chronic pyelonephritis - 2 patients with diabetic nephropathy and diabetes mellitus type 1 - 5 patients with hypertension - 6 patients, the anomaly of VMP - 2 patients, polycystic kidney disease - 2, gout - 1, systemic lupus erythematosus - 1 (Figure 1).

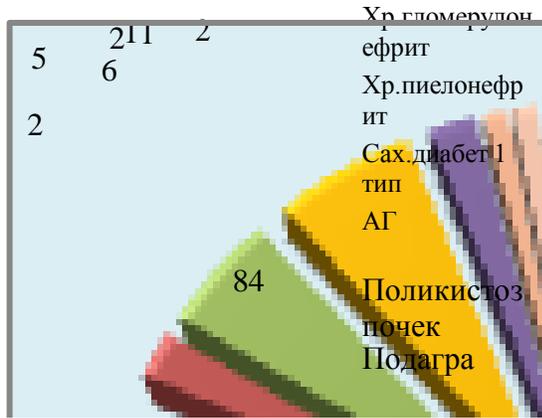


Figure 1. Causes of ESRD

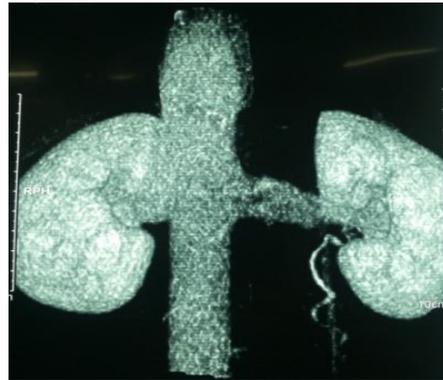


Figure 3.

In some cases, kidney transplants have anatomical features: in the first case had a kidney transplant 3 renal arteries in 14 cases and took place 2nd renal arteries in 3 cases occurred 2 renal veins.

All of these features required number of reconstructive operations on the stage "backtable". In eleven cases it was reconstructed renal artery graft type "side to side", and 3 cases - type "end to side." With respect to the renal vein - in two cases, one of the veins of smaller diameter was banded; in the third case - both veins were combined into one trunk anastomosis "side to side".

In 62 cases, and arterial anastomosis was performed between the renal artery of the donor kidney and external iliac artery of the recipient on an "end to side"; 38 -x cases arterial anastomosis was performed on an "end to end" between the renal artery graft and internal iliac artery of the recipient; in two cases the main trunk of the renal artery to the external iliac artery of the recipient on an "end

The average duration of dialysis before a kidney allograft (ATP) was 11.7 months.  $\pm 21,6$ . Among the recipients 10 patients were operated on predialysis. Primary transplantations were performed 99 (99%), повторных - 1 (1%), the first graft-operated for 10 years. Three patients at the time of the operation had viral hepatitis - C stage clinical and laboratory remission and four patients hepatitis - B, as in the phase of clinical and laboratory remission.

The surgical procedure was standard kidney transplant and kidney transplant was performed in the retroperitoneal space right iliac fossa.

### RESULTS

The 91 th case, the hand-assisted laparoscopic kidney fence and in three cases - open fence kidney (2 mini lyumbotomnym 1 adrectal access). In 89 cases, and was produced by a fence and left donor kidney in 5 cases - the right kidney (Figure 2).

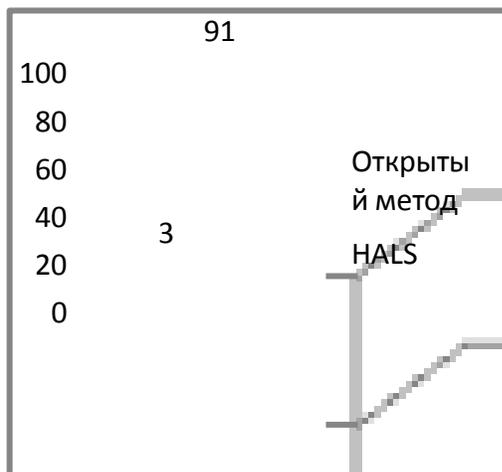


Figure 2. By the method of sampling the kidney

Intraoperative complications in all of 94 cases were not. In one case in the early postoperative period, there has been a postoperative hematoma bed donor kidney that required reoperation and perform additional hemostasis (on the first day after a kidney fence, fence kidneys perform open method).

All donors at the stage of the survey was carried out computer tomography with bolus contrast enhancement (Figure 3).

to side" nizhnepolyarnaya renal artery and superficial epigastric artery to the "end-to-end."

In all cases, the venous anastomosis was performed on an "end to side" among kidney transplant renal vein and external iliac vein of the recipient. Ureteroneosteoanastomoz was performed in all cases by the method of the Lich-Gregoire with stenting JJ-stent 6 Fr.

We used the following protocols immunosuppression: In 98.1% of the cases as induction therapy applied blocker IL-2 receptors - basiliximab and 1.9% of anti-thymocyte globulin. Intraoperatively administered to all recipients solumedrol followed daily for 2 postoperative days, and reduction of the subsequent transition to tableted prednisone. In terms of postoperative immunosuppression, 59 patients received tacrolimus, mycophenolatemofetil (MMF) and prednisone; 3 patients received tacrolimus, mycophenolatemofetil, and prednisone. In order to reduce the risk of toxic effects of drugs on the body of the recipient within 14-days after surgery, with a gradual reduction of the do I stop. Each time a dose and regimen of immunosuppressive therapy adjusted individually.

Conditionally divided complications ATP into two groups (surgical and nonsurgical) to nai-bolee severe surgical complications ot-nesli thrombosis, stenosis of vascular anastomoses.

Two patients in the early postoperative hemodialysis because of delayed graft function.

In clinical practice, vascular complications after kidney transplantation is a very serious problem, since the late diagnosis and lack of timely treatment leads to the development of rapidly progressive dysfunction and early loss of kidney allograft. The rate of such complications ranged from 0.5 to 8% [1], with an average of about 2% [9, 12, 17]. Among the complications of vascular thrombosis and isolated renal allograft artery stenosis.

In the intraoperative period, renal artery thrombosis, renal allograft we observed during surgery in one case and one case of anastomotic narrowing of blood 2%. In both cases, it was re-made canned kidney transplant, the reconstruction of arterial anastomosis with the restoration of organ function. Graft function immediately. In one case of atrial fibrillation occurred when the jugular vein catheterization performed defibrillation operation continued. In one case - the syndrome of malignant hyperthermia (1 hour before the operation increased body temperature to 410C). A encasing ice, gastric lavage through nasogastric cold solution, the abolition of fentanyl, a muscle relaxant, the further conduct of anesthesia propofol. In OARIT: 15 minutes after the transfer of operating against a background of intensive care cardiac arrest occurs, the restored Cardiac Intensive activities for 5 minutes. The normalization of body temperature in 3 hours.

In the postoperative period in 12 cases complicated by a hematoma bed kidney transplant: reoperation, sanitation, an additional hemostasis. In one case bundle the external iliac artery intima made repeated preservation kidney transplant, suture of the external iliac artery defect, arterial reanastomoz with the internal iliac artery. Graft function immediately.

In one case bundle the external iliac artery and external iliac vein - polseoperatsionnoy wound hematoma and

intraoperative massive bleeding: transplantatektomiya, suturing the defect external iliac vein, prosthetic right external iliac artery (36 days after renal allograft and 13<sup>th</sup> days after discharge from the hospital). Produced by removing the infected graft, ligation of the right common iliac artery, bypass cross from the left external iliac artery on the right common femoral artery (60-61 days after renal allograft).

In one case, occurred distal ureteral stricture: reconstructed ureteroneosteoanastomoz with ureteral stenting (83 rd day), and one case of failure of ureteroneosteoanastomoz (on the second day after the operation due to the inadequate functioning of the urinary catheter) - reoperation, reconstruction ureteroneosteoanastomoz with intravesical ureteral anastomosis and ureteral stenting.

Acute graft rejection (rejection crisis) may develop on any timing after organ transplantation. According to the data of the world more often it occurs in the early post-transplant period (up to 70% during the first three months after transplant).

In our clinic, the figure is 8 (8%) cases. The total number of non-surgical complications was 12 cases (12%) - an acute crisis of rejection 8 cases, tubular necrosis - 2, acute myocardial infarction - 1, loss of the graft against the background of activation of CMV infection and late treatment of the patient in a hospital - 1 case.

The causes of complications in recipients were: diabetes mellitus type 1 - 2 patients, hypertension - 2 patients, chronic glomerulonephritis, hypertensive form - 8 patients had a history. Donors in 2 cases were with the death of the brain and the 10th related donors. The main factors were also such as the preparation of pre-transplantation, the number of HLA-matching system, the result of cross-match, as well as the duration of cold ischemia of the graft, which could cause-onset ESRD.

Graft dysfunction noted to increase the value of serum creatinine. With the sudden increase in creatinine, in the absence of suspicion of any other reasons for renal allograft disfunk-tsii established clinical diagnosis - os-troe rejection and performed "pulse therapy" methylprednisolone (intravenous pre-parata 3 consecutive days of 500-1000 mg. up to a total dose of 1.5-3 g). In some cases, a biopsy was performed the transplant with a morphological study. With the gradual increase of creatinine, which is usually observed in the late period posleoperatsion-nom also performed a morphological nature of the lesion diagnosis of renal allograft.

## DISCUSSION

Results of the first 100 liver transplantations allow to look to the future. Nako-plenny experience will help to avoid many oslozh-nyeny and thus improve the long-term results. All patients after kidney transplantation are under the supervision of a nephrologist and transplant in the community after discharge from hospital. The survival rate was 98% (98 people). In the long-term period, two patients died: one at independent violation of the immunosuppressive therapy developed graft rejection crisis, one cause of death was septic-purulent complications of hip fracture 11 months after renal transplantation. The survival of the recipients in the first 12 months after ATP, which amounted to 98%, corresponds to the data of the co-world statistics and the

results corresponded to register The international society for heart & lung transplantation 95% - 98% (17).

Due to the fact that the technical possibilities clinics meet the highest requirements and organized service nationally dispensary for patients with transplanted kidney, it is possible to detect in time the complications and their correction provided as surgical and therapeutic. The study of clinical status and psychological potential using modern diagnostic techniques is a plan to achieve the best results of psychological adaptation of patients for surgery and treatment post-surgery. Moreover, patient support psychologically late after ATP allows the patient to control the pre-emptive immunosuppressive therapy and timely detection of an abnormality in the drugs that prevents the development of rejection in the graft.

Diseases that eventually brought about ESRD, can reduce the life of transplantata, so the treatment and prevention developed complications remain an urgent task.

Kidney transplant for patients with ESRD - the only way to stay alive and keep a decent quality of life in society. The success of transplantation today can reduce the mortality rate among those who yesterday was completely hopeless.

#### CONCLUSION:

Based on these studies, provided using modern methods for planning of diagnostic method of operative treatment, with adequate selection of offered for transplantation can achieve immediate results after ATP. Individualized immunosuppression based on increase of serum creatinine values, may reduce complications after transplantation and improve long-term results.

Today in Kazakhstan dominated kidney transplant from a living related donor. This allows better quality donor organs and at the same time have a more favorable outcome compared with transplantation of a kidney from a deceased donor. Although there is a risk of complications in kidney donors, which increases the responsibility in the conduct of these operations.

Proper organization of transplant services with quality inspection of donor pairs, training in all necessary for the process industries, the introduction of the practice of hand-assisted laparoscopic donor kidney and all current protocols of management of patients in the postoperative period allows maximum avoid possible complications, like kidney donors, and recipients, as well as get a quality function in kidney transplant.

A significant factor - the formation of positive attitudes towards donation and transplantation. It should be well-directed public information policy, continued cooperation with the media to organize and conduct information and education programs, interaction with representatives of major religious denominations.

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