Cardiovascular diseases remain the first cause of death in kidney transplant population with functioning graft. More than 40% of patients died for cardiovascular accidents, myocardial infarction, arrhythmias and other cardiovascular causes.

An enormous progress has been made in the last ten years in the immunosuppressive therapy. In fact, the life survival at 10 years after renal transplantation is present in 70% of subjects and renal survival occurs in 60% of patients but the cardiovascular risk remains high considering that the immunosuppressive drugs contribute largely to increase it.

The most important cardiovascular risk factors are represented by arterial blood hypertension, hyperlipidemia and new onset diabetes mellitus. Hypertension is the first cardiovascular risk factor occurring in 60-80% of renal transplant patients. Corticosteroids and calcineurin inhibitors contribute largely to maintain blood hypertension. Thus, the rationale for reducing blood pressure is an accurate blood pressure screening and monitoring, and an aggressive antihypertensive therapy. Blood pressure self-measurement should be encouraged in transplant patients and under therapy values must be less than 140/90 mmHg. These values should be reduced in patients with proteinuria (125/75 mmHg) and in those with ischemic heart disease (130/80 mmHg). General measures which should be adopted include keeping body weight under control (diet), salt restriction and increased physical activity.

Interestingly, modification of the immunosuppressive therapy contribute to the reduction of hypertension. Reduction or withdrawal of the maintenance dose of corticosteroids and new combinations of immunosuppressive drugs which minimize the use of corticosteroids and cyclosporine A are recommended. Drugs devoid of hypertensive and nephrotoxic effects as TOR inhibitors (sirolimus, everolimus) and mycophenolate mofetil may be used. Randomized clinical studies have shown a significant reduction of arterial blood hypertension when transplant patients were converted from cyclosporine A to tacrolimus or when they stopped cyclosporine A after the first 3 months of the post-transplant therapy and continued with only rapamycin. The Framingham risk score reduced significantly in these patients after the above modifications of the immunosuppressive therapy. This means a reduction of 20% of the estimated risk for coronary heart disease over a period of 10 years.

The administration of antihypertensive drugs as non-dihydropyridine calcium channel blockers, ace-inhibitors, angiotensin 2 receptor blockers, β-andrenergic recepror blockers and diuretics is the priority.

Calcium channel blockers are first choice drugs for the treatment of post-transplant hypertension since they reverse cyclosporine A vasoconstriction and its nephrotoxicity.

Ace-inhibitors and angiotensin 2 receptor blockers are necessary in the transplant patients with proteinuria.

β-andrenergic recepror blockers are recommended in transplant patients with angina, coronary artery disease, heart failure and arrhythmia.
Aggressive blood pressure control is indispensable because the European observational study, carried out in more than 24-thousand transplant patients for a period of 10 years, revealed a significant reduction in cardiovascular death in subjects with blood pressure values less than 140/90 mmHg and an improvement of graft survival in 70% of subjects with respect to 55% of patients with blood pressure more than 140/90 mmHg.

Additional drugs, like anti-hypertensive agents, to the immunosuppressive therapy do not increase the mean yearly cost of the transplant patients (from €2500 to €7000) since the price of anti-hypertensive therapy is low (€250 per year). They contribute to reduce cardiovascular risk and to improve the cost-benefit ratio by decreasing the vascular morbidity and mortality and by increasing graft survival.