

Comment

The following issue of the „Postępy Nauk Medycznych” is dedicated to the subject of kidney transplantation in terms of internal medicine, articles were written by nephrologists – clinical transplantologists from leading Polish transplant centers involved in the chronic care of kidney recipient. We are presenting research and clinical original papers, reviews and case reports.

The number of kidney transplants in 2013 in our country amounted to 1076, in Poland, there are over 10 thousand people with kidney transplants. One of the major problems is the limited survival of kidney transplantation. As a result of the impact of immune and non-immune agents, inflammatory process occurs to be followed by interstitial tissue fibrosis and progression of renal transplant insufficiency.

The article by prof. Andrzej Oko is devoted to the pathogenesis of chronic renal allograft damage. He draws attention to the complexity of the process and shows that, in the light of new research, the main cause of chronic graft dysfunction is not, as previously thought, nephrotoxicity of calcineurin inhibitors, but the immune process of chronic humoral rejection in the transplant (AMR – antibody mediated rejection). In the biopsy image of a kidney, the presence of diffuse linear C4d deposition in the paraurethral capillaries of renal cortex and medulla is typical along with the presence of anti-HLA antibodies specific for the donor (DSA) in the recipient's blood. The main cause of AMR is inadequate immunosuppression, often resulting from poor patient cooperation and failure to follow a regular intake of immunosuppressive drugs. Prevention and treatment of chronic humoral response is a new challenge for transplantologists.

The paper by Oktawia Mazanowska and Marian Klinger is also devoted to the pathogenesis of chronic transplant damage, they concentrate on the disorders of the extracellular matrix-degrading enzyme proteins: metalloproteinases and tissue inhibitors of metalloproteinases (MMPs/TIMPs), with greater activity of tissue inhibitors of metalloproteinases (TIMPs), which indicates a significant impairment in the processes of ECM degradation of chronic renal allograft damage. The authors believe that the tissue inhibitors of metalloproteinases (TIMPs) are a new threat indicators of the progressive loss of filtration and may be useful biomarkers in clinical practice used to monitor the recipients at a later period after kidney transplantation, when chronic graft failure begins to dominate.

A similar question of the role of epithelial-mesenchymal transition (EMT) in the process of fibrosis and tubular atrophy in kidney transplant is dealt with in the paper by Robert Świder et al. The question whether the epithelial-mesenchymal transition may be a useful marker in assessing the progression of chronic renal graft remains open.

Cardiovascular complications in renal transplant recipients are very common and are a major cause of death in patients after transplantation. An attempt to answer the question concerning the importance of VAP-1 (vascular adhesion protein-1) and renalase in transplant recipients and their role in the pathogenesis of cardiovascular diseases was taken up by Ewa Koc-Zurowska et al.

Hypertension occurs in most patients after renal transplantation. The etiology of hypertension in this group of patients is usually complex, and narrowing of the artery to a transplant should always be taken into account at the differentiation of its causes. Natalia Słabiak-Błaż et al. discuss the diagnosis and treatment of arterial stenosis of the transplanted kidney. Proper early diagnosis is very important, as percutaneous balloon angioplasty combined with stent implantation at the site of stenosis is 65-100% effective in treatment and leads to an improvement or stabilization of graft function.

In turn, Joanna Stępniewska et al. discuss the problem of obesity in dialyzed patients eligible for renal transplantation. In most transplant surgery centers, transplantation is conditioned by patient's BMI exceeding 35 kg/m². Patients with BMI > 35 kg/m² are often disqualified, although kidney transplantation should be their treatment of choice. The authors present two cases of bariatric surgery as an effective method to prepare for transplantation. Bariatric surgeries are increasingly being performed in patients awaiting transplantation or after renal transplantation.

Tumors, next to cardiovascular diseases and infections are the leading cause of death among vascularized organ recipients. After transplantation, de novo tumors develop most often, a relapse of any cancer diagnosed and treated before transplantation is much less likely. Cured cancer, after a qualifying period of grace, is not a contraindication to transplantation, but relapses have been described. Renata Wieczorek-Godlewska et al. show an unexpectedly rapid recurrence of a rare tumor, stromal sarcoma of the uterus, which occurred shortly after a transplant from a deceased donor, in a patient after oncological treatment ended seven years before transplantation. The dramatic course of the disease, complicated by recurrent massive thrombosis of the inferior vena cava, right heart cavities and pulmonary embolism and severe infectious complications is an example of the difficulties in classifying patients with a history of oncology for transplantation.

Within infectious complications after renal transplantation, urinary tract infections are the most frequently reported. Aneta Małyska et al. discuss the multidrug-resistant *Klebsiella pneumoniae* infection basing on their own material of 38 patients in the early period after kidney transplantation. It is an interesting observation to state that this infection does not adversely affect the distant function of the transplanted kidney.

One method of optimizing the use of immunosuppressive therapy is therapeutic drug monitoring. Therapeutic drug monitoring (TDM) allows to determine the dose so that the drug concentration in the blood reached the range characterized by both, effectiveness, and low risk of side effects. The problem of determining the levels of mycophenolic acid is discussed by prof. Krzysztof Dziewanowski et al. The authors, basing on their own results, conclude that the determination of the level of MPA should be part of standard post-transplantation care.

A very interesting case of primary hyperoxaluria in a 65-year-old woman after kidney transplantation has been represented by Maciej Sawosz et al. The diagnosis was based on a biopsy of the transplanted kidney and confirmed by the presence of the C508G > A mutation, despite attempts of treatment, the patient lost her kidney transplant. This case requires a thorough analysis of unclear cause of renal failure in patients eligible for transplantation.

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