SUMMARY

Acute rejection and chronic transplant nephropathy are the main complications after kidney transplantation. A broad spectrum of cytokines, chemokines and growth factors are involved in their etiology. The aim of this submitted dissertation was to find the influence of polymorphisms in selected genes and their intrarenal expression on kidney graft outcome. All studies were designed to follow a large cohort of individuals in order to be able to elucidate some unclear and inconsistent published results.

1. Cytokines and chemokines TGF-β1, TNF-α, IL-6, IL-10, MCP-1 and RANTES are up-regulated in different rates in acute rejection, chronic transplant nephropathy and also in other causes of kidney graft dysfunction.
2. High intrarenal expression of TGF-β1 and MCP-1 mRNA in CAN predicts a higher risk of kidney graft dysfunction in the long-term. Also, the kidney graft survival is significantly shorter.
3. Intrarenal gene expression profile of TGF-β1, TNF-α, IL-6, IL-10, MCP-1 and RANTES is different during various causes of graft dysfunction. The intrarenal expression level cannot be used for diagnostic purposes, but it can alert higher immunological activity in kidney graft, which can lead to earlier failure of renal functions.
4. We did not confirm an association of TNF-α-308G/A, MCP-1 -2518 A/G, RANTES-403G/A, -109T/C, -28C/G, CCR2+190G/A, IFN-γ +874A/T, TGF-β1 -869T/C, +915G/C and CCR5Δ32 polymorphisms with acute rejection, subclinical rejection or CAN.