

Abstract

One of the main effects of pro-inflammatory cytokines is the induction of chemokines and the expression of adhesive molecules that regulate the migration of immune cells to the center of the damage. Chemoattractant gradient also provides a physiological delivery of cells to tissues and lymphatic organs under normal circumstances. Chemokines are chemotactic cytokines that form a very large and diverse group of secreted proteins that have many functions both in processes that maintain homeostasis but also in inflammatory states.

Production of some chemokines also has a major effect on graft rejection. Further understanding of the mechanisms involved in the acute rejection chemokine could contribute to improving treatment steps in transplantology.

In this diploma thesis, serum chemokine levels were monitored in renal transplant patients, but these measurements did not show significant dynamics. Furthermore, the effect of pro-inflammatory cytokines on the release of chemokines from renal epithelial cells and monocytes was studied. Experiments were performed to monitor the levels of individual chemokines such as ENA-78, IL-8, MCP-1, MIP-1 β , RANTES, GRO alpha, THP-1 (monocyte/macrophage cell line), RPTEC (renal epithelial cells of proximal tubules) and RA (renal cell tumor lines). TNF- α (tumor necrosis factor alpha) was used to stimulate. Chemokine ENA-78 was most produced in the RA cell culture, chemokine IL-8 (CXCL-8) had the highest level in RPTEC cells, the highest levels of MCP-1 were achieved in RA cells. Overall, the highest values for TNF- α stimulated THP-1 cells reached the RANTES chemokine, with peak RPTEC cells reaching the GRO alpha chemokine.

Induction of CD54 was greatest in THP-1 cells, RA expression was less, in RPTEC cells the antigen was not detected even after stimulation. Chemokine levels in supernatants were measured using Luminex technology.

Key words: chemokines, ENA-78, IL-8, MCP-1, MIP-1 β , RANTES, GRO alpha