

Abstract

The term transplantation tolerance is considered for a long-term graft survival without the need of immunosuppressive therapy. In experimental models, there are many ways to induce the tolerance but have not been transferred into clinical practice, yet. Currently used pharmacological immunosuppression is designed to allow the body to accept the presence of graft and also to preserve the immune system of the recipient. Results of some studies have shown that doses of immunosuppressive agents can be reduced to a minimum and patients might survive for years without an immunosuppression in few cases. The future of immunological tolerance is associated with the development of biomarkers or the use of mesenchymal stem cells. The aim of this thesis is to summarize current knowledge of mechanisms of immunological tolerance in organ transplantations and try to find prospective targets, which could be directed to further research.

Keywords: immune tolerance, organ transplantations, rejection, immunosuppression, immunomodulation