12. IMMUNOPATHOLOGY OF LIVER TRANSPLANTATION

Author: Cușnir Magdalena

Scientific advisor: Iacub Vladimir, MD, Associate Professor, General Surgery-Semiology Department No. 3, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Liver transplantation is a new lead in surgery and hepatology domains. This procedure requires drastic changes in the human immune system to ease the recipient's graft for the donor, including immunodeficiency for both parties. This way the transplant implies lesser risks for graft rejection, even though complications happen at a moderate rate.

Aim of study. Based on scientific data from special literature there is a need to determine the cause factors of the incompatibility reactions in liver transplant failure and see the possibilities to observe both the transplantation and recovery after. Therefore, this literature research tends to make a retrospective on the immune modifications and complications in the process of getting a liver transplant.

Methods and materials. This study presents a literature review, published on scientific platforms, such as PubMed, USA National Library of Medicine, JSTOR, and Google Scholar, that refer to liver transplantation and it's immune-modulations. This paper includes results based on 10 publications.

Results. One study presents that 19% of recipients of liver grafts show failed immunosuppression, and yet another study determined that only 12 out of 20(60%) of children recipients present successful immunosuppression, with no portal inflammation. Donors' and recipients' body immune modulation determines the favorable outcome of the liver transplant, which requires immunodeficiency for 3 types of antigens: AB0, major HLA, and minor HLA. Not suppressing enough, the liver graft can cause donor T-cell-specific intolerance at the interaction of hepatic/portal antigens with endotoxins produced by intestinal bacteria. This results in the secretion of pro-inflammatory substances: cytokines, IFN-γ, and co-stimulatory agents that induce major liver inflammation, necrosis, and graft rejection. Another immunopathological mechanism in liver transplantation is the interaction between the donors' and recipients' HLA antigens, resulting in excess production of IgG, especially IgG3, presented in the Baylor group study on patients with chronic liver transplant rejection.

Conclusion. Liver transplant has a great impact on the human body. The recipient goes through life immune suppression in order to minimize the chances of graft failure, but eventually, AB0 and HLA incompatibility can result in severe immunopathologies. Studies present that most allografts show different stages of rejection. Acute and chronic rejection yield under proper immunosuppressing treatment, the recommended combination being: calcineurin inhibitors (cyclosporin), antimetabolite agents (azathioprine) corticosteroids, and mammalian target of rapamycin inhibitors (sirolimus).