ABSTRACT

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Title of diploma thesis: Lymphocyte reconstitution after allogeneic hematopoietic stem cell transplantation

Allogeneic hematopoietic stem cell transplantation is the most effective treatment option for patients with hematologic malignancies, including acute myeloid leukemia, myelodysplastic syndrome, or the rarer myelosarcoma. After a successful transplantation, the immune system cells are regenerated, and this master's thesis focuses on one aspect of that process: lymphocyte reconstitution. The experimental part of the study involved patients who underwent allogeneic transplantation of blood-forming cells based on their unfavorable diagnosis. These patients were then monitored for one year at the Institute of Clinical Immunology and Allergology at the Faculty Hospital in Hradec Králové. Observations were conducted at three months and continued until the end of the first year, using flow cytometry as the method of assessment. By analyzing diverse surface markers on selected immune cells, it was possible to track patients with hematologic malignancies and observe the subsequent course of lymphocyte reconstitution after allogeneic hematopoietic stem cell transplantation. Factors such as patient age and the conditioning regimen before transplantation were also studied for their potential influence on the reconstitution process. The results revealed successful reconstitution of B lymphocytes, insufficient recovery of T lymphocyte populations, and a possible impact of the RIC regimen on the reconstitution process.

Key words: lymphocytes, allogeneic hematopoietic stem cell transplantation, flow cytometry, immunophenotyping, acute myeloid leukemia