

Abstract

Risk of skin cancer and lymphoproliferative diseases in patients after kidney transplantation

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Introduction and aims: Organ transplantations (Tx) are associated with the lifelong use of immunosuppressive therapy (IS), which carries with it, among other risks, an increased incidence of malignancies. The most common malignancies after Tx are skin tumors, post-transplant lymphoproliferative diseases (PTLD) are also more common in transplant patients. The aim of the study was to determine the incidence of skin tumors and PTLD in patients with kidney Tx within one transplant center and to analyze the risk factors associated with these diseases.

Methods: Retrospective longitudinal study was conducted in the Teaching Hospital Hradec Králové. The study included patients from the age of 18 who had overcome kidney Tx until 24 April 2019, were registered in a transplant clinic in Hradec Králové and had a medical record in the hospital information system. Data collection from medical records took place from 15 April 2019 to 31 December 2019. Collected data included demographic characteristics, family history, transplant characteristics, IS and other medications, renal functions, data on tumors before Tx and after Tx and other clinical data. Social characteristics were collected via questionnaire survey. The collected data were processed by descriptive statistics and selected parametric tests.

Results: The study included 410 patients with the mean age of 57.0 ± 12.2 years. The mean time after Tx was 8.2 ± 6.2 years. Tumors occurred before Tx in 18.8 % of patients, after Tx in 30.0 % of patients. Malignant tumors after Tx occurred in 17.3 %, with skin tumors being the most common malignancy. Skin tumors occurred in 12.0 % of the study population, the most common type of skin tumor was squamous cell carcinoma. The incidence rate for skin tumors was 16.0 per 1,000 person-years. The mean time from Tx to the onset of the first skin tumor was 71 ± 45 months, with increasing age at the time of Tx, the time from Tx to the development of a skin tumor decreased. Patients who underwent the last Tx at the age over 50.9 years had a significantly higher risk of skin tumors ($p < 0.001$). Prevalence of PTLD up to 1. 6. 2019 was 1.0 % and the incidence rate was 1.2 per 1,000 person-years.

Conclusions: In patients after renal Tx, skin tumors were found to be the most common malignancy, a higher incidence was also found in PTLD. Patients transplanted at an older age and patients taking cyclosporine immediately after Tx had a higher risk of post-transplant skin tumors.

Key words: kidney transplantation, immunosuppressives, skin cancer, lymphoproliferative disease, Czech Republic.