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Malignancies after renal transplantation in Korean recipients

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Objectives: With the number of kidney transplantations in Korea doubling, about 2300 cases in 2019, interest in long-term complications in transplant recipients is also increasing. Malignancy is one of the leading causes of death in recipients and the use of immunosuppressants or cancer-causing virus infection is considered as risk factors. Also, in them, it is known that the distribution and risk factors of cancers are different from those of the general population. So here we reported prevalence and risk factors of cancers in Korean kidney transplant recipients.

Methods: Using data from Korean National Health Insurance Service, we compared incidence of malignancies after renal transplantation to general population by standardized incidence ratios (SIR).

Results: Total 18854 (male:female 11173:7681, median age 47) patients were transplanted from 2003 to 2019, of which 1055 (5.6%) developed cancers. Compared to general population, recipients had 2 fold higher risk (SIR 2.23, 95% confidence intervals (CI) 2.1-2.37). In adults, highest risk cancer than general population is kaposi sarcoma (SIR 194.64, 95% CI 108.94-321.03) followed by non-melanoma skin cancer (SIR 10.05, 95% CI 7.72-12.86), kidney and other urological cancer (C64-68, SIR 8.8, 95% CI 7.57-10.18), and non-hodgkin lymphoma (SIR 8.01, 95% CI 6.28-10.07). Of 592 patients, under 19 years old, 23 (3.9%, SIR 31.85, 95% CI 20.19-47.79) developed cancer, of which 17(SIR 186.55, 95% CI 108.67-298.69) were non-hodgkin lymphoma. Cancer incidence was the lowest within 1 year after transplantation (133 of 1055, SIR 1.64, 95% CI 1.38-1.95), the highest after 1-3 years of transplantation (230 of 922, SIR 1.75, 95% CI 1.53-1.99), and thereafter gradually decreased.

Conclusions: Cancer risk after renal transplantation is higher than general population especially under 19 years old. Also, as types of cancer are different from general population, close monitoring and screening is necessary in transplant recipients.