

Abstract Type : Oral

Abstract Submission No. : 1597

Clinical Features of De Novo Cancer at Early Period after Kidney Transplantation in Korea

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Objectives: Post-transplant malignancy (PTM) after kidney transplantation (KT) is a major cause of graft failure and patient mortality among kidney transplant recipients (KTRs). Although there have been several reports of de novo cancer incidence after KT in Korea, assessment associated with risk factors of PTM is scarce. We evaluated the incidence and risk factors of de novo cancer after KT in Korea.

Methods: We evaluated a total of 9150 KTRs enrolled in the Korean Organ Transplantation Registry as a prospective cohort between May, 2014 and December, 2021. Non-korean KTRs, patients with pre-transplant cancer history and missing data were excluded. We assessed the incidence and characteristics of de novo cancer. After KTRs were divided into two groups as the PTM (n=173) and the non-PTM (n=7939), PTM-associated risk factors were analyzed.

Results: For the mean follow-up period of 2.8 years, 183 recipients (2.1%) were diagnosed to de novo cancer. The most common type of de novo cancer was renal cell carcinoma (n=32), and followed by thyroid cancer (n=27) and upper gastrointestinal malignancy (n=16). Elderly KTRs more than 60 years were more incidence of de novo cancer than younger patients (for 40 years ≤ KTRs, p<0.05). Standard incidence ratio for PTM was the highest in the testis cancer, followed by kidney cancer, esophagus cancer, non-hodgkin lymphoma. The PTM group was older age, more rate of deceased donor, longer dialysis duration, more acute rejection and infectious complications than the non-PTM group. In multivariate analysis, age of recipients, KT from deceased donor, and infectious complication were an independent risk factor of PTM.

Conclusions: At early period after KT, the most common type of de novo cancer was renal cell carcinoma. Older recipient age, donor type and infectious complication were independent risk factors of PTM. Careful surveillance to find PTM in kidney transplant patients is necessary, especially in elderly recipients.