Incidence, characteristics, and outcome of post-heart transplant malignancy

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Background: Post-transplant malignancy (PTM) has been an important cause of long-term morbidity and mortality in heart transplant (HTx) recipients. However, the detailed characteristics of PTM are largely unknown. We aimed to describe the characteristics, outcomes, and predictors of de novo PTM in HTx recipients.

Methods: We analyzed 989 consecutively enrolled HTx recipients without pre-transplant history of malignancy between 1997 and 2013. Main outcomes included the incidence, characteristics, outcomes, and predictors of PTM.

Results: During a median follow-up period of 11.5 years, 206 patients (20.8%) had de novo PTMs (241 cancer cases). PTM patients, compared with non-PTM patients, showed older age, longer time on immunosuppression, and higher proportion of male and white patients. Skin cancers were the most frequent types of malignancy (60.6%) followed by prostate cancers (9.5%), lung cancers (7.1%), and breast cancers (4.1%). While most of the cancers (88.8%) were surgically resected at the initial presentation, about half of cancers (47.3%) showed recurrence or disease progression. Both patients with skin cancer and non-skin cancer, compared to patients without PTM, revealed a significantly lower overall survival ($P<0.001$). Multivariable analysis revealed older age ($P<0.001$), white race ($P=0.001$), and longer time on immunosuppression ($P<0.001$) were independent predictors for PTM.

Conclusions: Older, white recipients with longer time on immunosuppression were independent risk factors for PTM, which was associated with increased mortality. Enhanced cancer screening and individualized immunosuppression in these high-risk patients should be studied to improve the outcomes.

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