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Commentary: Selection criteria for lung transplantation—is there room for individualization?

Peter Jaksch, MD, and
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According to current guidelines, a recent malignancy is a clear contraindication for lung transplantation (LTx).¹ As the risk for tumor progression/early recurrence is considered greater in immunosuppressed patients, a tumor-free interval of 5 years is recommended for most malignancies before listing. Only for nonmelanoma skin cancer can this time interval be reduced to 2 years. In this issue of the *Journal*, Noguchi and colleagues² summarized the Japanese experience of LTx for patients who developed pulmonary complications after hematopoietic stem cell transplantation. Many of the patients included in the analysis did not fulfill the required 5-year tumor-free interval. Instead, a tumor-free interval of 2 years was accepted when hematologists estimated the recurrence rate to be <30%. The reported outcome after LTx was excellent, with a 5-year survival rate of 75% and not a single recurring malignancy.

This paper is well in line with current attempts to individualize treatment concepts—even in the highly standardized field of LTx. Applying strict criteria of a cancer-free period before listing inevitably deprives a life-saving transplantation from a considerable proportion of patients. For stage I colorectal cancer, recurrence-free 5-year survival is almost 95%, and it is even greater for the subgroup of T1 tumors.³ Is it really justified to reject a transplant request for a fast-deteriorating fibrosis patient who had a small T1N0 colorectal cancer removed 3 years before? The intuitive response of most transplant physicians would be no; still, the guidelines tell us otherwise. We face a similar situation

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CENTRAL MESSAGE

Patients with a recent malignancy should not be excluded a priori from lung transplantation. An individualized approach is justified.

in some of our patients with chronic obstructive pulmonary disease and interstitial lung disease with a proven T1a non-small cell lung cancer or an unverified small nodule highly suspicious for early lung cancer. Although a formal contraindication, in most centers such lesions do not preclude from LTx since long-term outcomes are comparable with recipients without a tumor in their native lungs.⁴⁻⁶

We believe that every lung transplant candidate with a recent history of a localized cancer should be considered individually and oncologists as well as pathologists have to be included in the discussion. Of note, the prognosis of a malignancy is no longer limited to mere tumor staging but tumor biology has become increasingly important. Factors to be considered include mitosis rate, expression of immune check points, expression of growth factor receptors, mutations of oncogenes, loss of tumor suppressor genes, lymph node spreading, treatment type, and time passed since the resection. Often, the estimation of recurrence rates does not take novel targeted anticancer therapies into account, which are now available for a variety of malignancies. Based on these considerations, an LTx might be justified for one patient with a recent malignancy, whereas it could be a clear contraindication for another.

In conclusion, this work provides evidence for individualizing selection criteria for LTx. Instead of a priori excluding patients with a recent cancer from LTx, they should be thoroughly screened, discussed and if the risk for tumor recurrence is low, they should be listed.

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Commentary: Evidence over dogma: Lung transplant for posthematopoietic stem cell transplant related pulmonary failure

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Recent malignancy within 2 years has been deemed an absolute contraindication to lung transplant listing ever since the first edition of the recipient selection guidelines put forth by the International Society for Heart and Lung Transplantation in 1998.¹ In their most recent consensus from 2014, hematologic malignancies are specified among others in whom a disease-free interval (DFI) of 5 years is recommended.² Noguchi and colleagues³ in their recent study sought to demonstrate that, with appropriate selection based on estimated recurrence rates, patients with previous hematologic malignancies treated with hematopoietic stem cell transplant (HSCT) can safely undergo lung transplant without reaching a 5-year DFI.

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Jesse M. Rappaport, MD (left), and Usman Ahmad, MD, FACS (right)

CENTRAL MESSAGE

Five-year disease free-interval, while safe, may not be necessary in well-selected hematopoietic stem cell transplant patients who develop early pulmonary complications and failure.

The study presented included all lung transplants at their institution for pulmonary complications after HSCT but placed focus on 2 distinct aspects of these complicated patients: a disease process that does not allow for an extended DFI and the alteration of blood type after HSCT. In response to the early onset of post-HSCT lung failure, their protocol allows for lung transplant candidacy after 2 years for cadaveric lung transplant and earlier for living-donor lung transplant if the risk of recurrence of primary malignancy is considered less than 30%. While the authors do not clearly outline the methods of determining anticipated recurrence rates, it is important to note that the rate of primary malignancy relapse is greatest within the first 5 years following HSCT.⁴ A stratification to “standard risk” versus “high risk” based on malignancy characterization at time of