

## INVITED COMMENTARY

# How to take the skin cancer risk of your transplant patient seriously

Petter Gjersvik

Institute of Clinical Medicine,  
University of Oslo, Oslo, Norway

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**\*Correspondence**

Petter Gjersvik, Department of  
Dermatology, Oslo University  
Hospital, Oslo 0424, Norway.  
Tel.: +47-926-11-722;  
e-mail: petter.gjersvik@medisin.uio.no

Organ transplant recipients (OTRs) have a high risk of skin cancer, particularly cutaneous squamous cell carcinoma [1], which is associated with considerable morbidity, high costs, and increased mortality. Consequently, OTRs should be monitored for malignant and premalignant skin lesions and given advice on sun protection. As the number of OTRs worldwide is growing and OTRs are living longer, more and more OTRs are being referred to dermatologists, resulting in suboptimal follow-up for some patients and untenable workload for dermatologists. Transplant physicians and other nondermatology health care providers need easy-to-use screening tools to predict the risk of post-transplantation skin cancer [2]. In short, OTRs with a very high risk should be seen more often by a dermatologist than those with a low risk.

*Transplant International* publishes in this issue two twin papers on skin cancer surveillance of OTRs [3,4]. Crow *et al.* [3] report the results of a three-round Delphi survey with 84 U.S. expert dermatologists and transplant physicians on the need for initial skin cancer screening in OTRs in the United States. Consensus was reached on the initial stratification of OTRs (it should be done by the transplant team), and that dermatologists should perform full body skin examinations on screening. High-risk OTRs should be screened by a dermatologist within 2 or 5 years after transplantation

depending on the presence of specific risk factors, although the panelists emphasized the need for a simple, effective stratification tool.

Following up on the Delphi survey, Jambusaria-Pahlajan *et al.* [4] report on the development of the SUNTRAC screening tool for predicting skin cancer in OTRs. This screening tool is based on rigorously data collection and analysis of a large cohort of patients ( $n = 6340$ ) who received a solid organ transplant at 26 U.S. transplant centers as late as 2003 and 2008, with a follow-up of up to 10 or 5 years [5], thus avoiding a possible bias from a declining risk of post-transplant skin cancer since the mid-1980s [1,6], but allowing a satisfactory follow-up time. Using weighted point values for five risk factors (skin type, a history of pretransplant skin cancer, age, sex, and type of organ) and four skin cancer risk levels (low, medium, high, and very high), the authors were able to demonstrate a good prognostic discrimination for post-transplant skin cancer, defined as squamous cell carcinoma, melanoma, and Merkel cell carcinoma. Furthermore, the authors propose guidelines for time of first referral to a dermatologist after transplantation depending on the patient's SUNTRAC score, ranging from within 10 years for those with "low risk" to within 6 months for those with "very high risk." These recommendations are based on the consensus from the Delphi survey on a reasonable number-

needed-to-screen to diagnose one case of skin cancer [3,4].

Both papers are highly relevant for all healthcare providers involved in the follow-up of OTRs. Most importantly, the SUNTRAC screening tool and guidelines provide evidence-based recommendations for referrals to a dermatologist. One strength of the U.S. cohort on which the recommendations are based is its diversity regarding ethnicity, race, and skin type, indicating a high degree of generalizability and validity, as transplant cohorts in other industrialized countries increasingly include more patients with dark skin types. The SUNTRAC screening tool has already been validated in a Spanish OTR cohort, providing further evidence that the SUNTRAC risk scale is a valid, simple, and reliable tool to optimize skin cancer surveillance in OTRs (Gómez-Tomás A *et al.* 19th Annual Meeting of SCOPE [Skin Care in Organ-transplant Patients Europe], Barcelona, Spain, September 26–28, 2019).

As emphasized by the creators of the SUNTRAC screening tool, it remains important that transplant physicians ask for and look for any concerning skin lesion in their transplant patients and if in doubt refer such lesions to a dermatologist for evaluation regardless of the patient's SUNTRAC score [4]. Also, any OTR with a history of a pre- or post-transplantation skin cancer should continue surveillance as recommended by a dermatologist. This provides a “safety net” for those with suspicious skin lesions developing in the intervals before and between a dermatologist's screenings. The recommended time after transplantation for referral could be modified according to available resources and other factors.

Skin cancer surveillance and skin health in OTRs are the responsibility of both patients, family members, transplant physicians, and dermatologists. The need for skin cancer screening should not be dichotomized—to refer or not to refer to a dermatologist. All nondermatology healthcare providers should

perform some form of skin cancer screening of OTRs, including looking for new, changing or growing skin lesions, as well as giving advice on sun exposure habits.

The SUNTRAC screening tool highlights an obvious point: The follow-up of OTRs should be individualized. Most OTRs should use sun protection regardless of age and SUNTRAC risk score. This means avoiding heavy sun exposure, seeking shade, wearing protective clothes, hats and/or caps, and use of sun protection creams. However, some OTRs, particularly those with a dark skin type, are at risk of vitamin D deficiency if sun avoidance and sun protection is carried out too rigorously, even in sun-rich regions [7]. Verbal and written patient information for OTRs should take into account the wide range in skin cancer risk according to skin type, age, type of organ, and other risk factors. All OTRs are entitled to the best personalized health care available based on the presence of specific risk factors—not the same, one-type-fits-all health care.

If and when validated in other OTR cohorts, the SUNTRAC screening tool may prove to be a very useful tool in prioritizing OTRs for access to dermatologic assessment and care, particularly with a smart phone-based application easy to use in a busy clinical practice. The authors of the two papers in this issue of *Transplant International* have made important contributions to the efforts in improving prevention and early detection of skin cancer in OTRs.

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## REFERENCES

- Rizvi SMH, Aagnes B, Holdaas H, *et al.* Long-term change in the risk of skin cancer after organ transplantation. A population-based, nation-wide cohort study. *JAMA Dermatol* 2017; **153**: 1270.
- Lowenstein SE, Garrett G, Toland AE, *et al.* Risk prediction tools for keratinocyte carcinoma after solid organ transplantation: a review of the literature. *Br J Dermatol* 2017; **177**: 1202.
- Crow LD, Jambusaria-Pahlajani A, Chung CL, *et al.* Initial skin cancer screening for solid organ transplant recipients in the United States: Delphi method development of expert consensus guidelines. *Transpl Int* 2019; **32**: 1268.
- Jambusaria-Pahlajani A, Crow LD, Lowenstein S, *et al.* Predicting skin cancer in organ transplant recipients: development of the SUNTRAC screening tool using data from a multi-

- center cohort study. *Transpl Int* 2019; **32**: 1259.
5. Garrett GL, Blanc PD, Boscardin J, *et al.* Incidence of and risk factors for skin cancer in organ transplant recipients in the United States. *JAMA Dermatol* 2017; **153**: 296.
  6. Menzies S, O'Leary E, Callaghan G, *et al.* Declining incidence of keratinocyte carcinoma in organ transplant recipients. *Br J Dermatol* 2019. <https://doi.org/10.1111/bjd.18094>. Epub ahead of print.
  7. Ferrándiz-Pulido C, Torres IB, Juárez-Dobjanschi C, *et al.* Vitamin D deficiency in solid-organ transplant recipients from a Spanish Mediterranean population. *Clin Exp Dermatol* 2019; **44**: e103.