

Letter to editor**Non-melanoma Skin Cancer in Kidney Transplant Recipients: Apparent Geographical Differences : Letter to editor**Mehrddad Taghipour¹, Mohsen Motalebi^{1*}

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1. Introduction

Non-melanoma Skin Cancer (NMSC) is considered as the most common post-transplant malignancies in western countries (1); however, Kaposi's sarcoma is the most frequent cancer after kidney transplantation in Middle East countries (3, 4). In the study of Einollahi et al, which is performed on 11255 kidney transplant recipients, Kaposi's sarcoma was the most common tumor type (2). It would also be disheartening to know the incidence rate of Kaposi's sarcoma among kidney transplant recipients shows an ascending trend in the Middle East countries (3, 5). In addition, they reported that the incidence of post kidney transplant malignancies was lower than western countries and the skin cancer was occurred in 1.14% of all patients (2), it may partly be due to geographical differences.

In the study of Bernat et al (1), 305 patients underwent kidney transplantation and 73 (25.2%) of them developed NMSC, of which the most frequent tumor was basal cell carcinoma (BCC). Most studies conducted in European countries showed that the most common skin cancers after kidney transplantation was BCC like the report of Bernat and colleagues (6, 10). In contrast, studies in the Eastern Mediterranean area in Asia, the incidence of BCC and SCC were in the next position after Kaposi's sarcoma and Non-Hodgkin lymphoma (7, 8).

In addition, Bernat et al. (1) showed that age at time of transplant, low phototype and high pre-transplantation occupational sun exposure were risk factors for NMSC after kidney transplantation. Einollahi et al, reported that (2), the male sex, increased age, prolonged immunosuppression and azathioprine increased the risk of skin tumors after renal transplantation.

As we see in literature, it seems that the incidence of malignancies and its types varies between

Mediterranean Region countries and middle east asia population (4). Number of multicenter studies

conducted in with a large sample size in middle east asia countries showed that Kaposi sarcoma was the most frequent tumor in kidney transplant recipients, while these statistics are different in Mediterranean areas (5, 9). In these regions, the largest percentage is dedicated to NMSC such as SCC and BCC (1). Some factors are associated with the tumor developing after kidney transplantation such as HHV-8 and HPV infection. HHV-8 infection rate of in Mediterranean populations is intermediate (10).

In conclusion, since transplant recipients are susceptible to develop NMSC and these cutaneous lesions are the significant source of morbidity; therefore, a routine screening of these patients for skin malignancies should be performed. Phenotypic, clinical and environmental factors associated with the skin tumors following renal transplantation are different particularly due to geographic area as well as due to the study sample size, genetic variations, infectious diseases and also history of immunosuppression regimens.

Conflict of interest:

The authors declare no conflict of interest.

References

1. Bernat García J, Morales Suárez-Varela M, Vilata JJ, Marquina A, Pallardó L, Crespo J. Factors for non-melanoma skin cancer in kidney transplant patients in a Spanish population in the Mediterranean region. *Acta Derm Venereol* 2013; 93: 422–427.
2. Einollahi B, Nemati E, Lessan-Pezeshki M, Simforoosh N, Nourbala MH, Rostami Z, et al.

- Skin cancer after renal transplantation: Results of a multicenter study in Iran. *Ann Transplant* 2010; 15(3): 44-50.
3. Einollahi B, Lessan-Pezeshki M, Nourbala MH, Simforoosh N, Pourfarziani V, Nemati E, et al. Kaposi's sarcoma following living donor kidney transplantation: review of 7,939 recipients. *Int Urol Nephrol* 2009; 41:679–685.
 4. Einollahi B. Kaposi sarcoma after kidney transplantation. *IJKD* 2007; 1:2–11.
 5. Einollahi B, Rostami Z, Nourbala MH, Lessan-Pezeshki M, Simforoosh N, Nemati E, et al. Incidence of Malignancy after Living Kidney Transplantation: A Multicenter Study from Iran. *J Cancer* 2012; 3: 246-256.
 6. M. Lessan-Pezeshki, B. Einollahi, M.R. Khatami, and M. Mahdavi. Kidney Transplantation and Kaposi's Sarcoma: Review of 2050 Recipients. *Transplantation Proc* 2001; 33: 2818.
 7. M. Nafar, B. Einollahi, K. Hemati, F. Poor Reza Gholi, and A. Firouzan. Development of Malignancy Following Living Donor Kidney Transplantation. *Transplantation Proc* 2005; 37: 3065–3067.
 8. Lindelof B, Sigurgeirsson B, Gabel H, Stern RS. Incidence of skin cancer in 5356 patients following organ transplantation. *Br J Dermatol* 2000; 143(3): 513–19.
 9. Mackintosh LJ, Geddes CC, Herd RM. Skin tumours in the West of Scotland renal transplant population. *Br J Dermatol*. 2013 May;168(5):1047-53.
 10. Fernandes S, Carrelha AS, Marques Pinto G, Nolasco F, Barroso E, Cardoso J. [Skin disease in liver and kidney transplant recipients referred to the department of dermatology and venereology]. *Acta Med Port*. 2013 Sep-Oct;26(5):555-63.