

Chronic Diseases and Non-Melanoma Skin Cancer: Is There an Association?

Yvonne Romagosa¹, Shasa Hu¹ and Robert S. Kirsner¹

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Non-melanoma skin cancer (NMSC) has been associated with several other conditions, including melanoma and non-Hodgkin's lymphoma (Hjalgri *et al.*, 2000; Hu *et al.*, 2005). In addition, the risk of NMSC has been found to be greater in various chronic disease groups (Frisch *et al.*, 1996; Frisch and Melbye, 1995). It is uncertain whether this association is related to the treatments for those chronic diseases (such as radiation therapy or immunosuppressant therapy) rather than the disease itself (Saladi and Persaud, 2005; Karagas *et al.*, 2001). Moreover, using a Danish nationwide cohort of patients with NMSC, Jensen *et al.* (2006) found a lower mortality in basal cell carcinoma (BCC) patients compared with the general population, reflecting what the authors suggested to be a selection bias to that data set.



In a follow-up study utilizing a nationwide Danish patient registry linked to the nationwide cohort of patients with NMSC, the researchers attempted to analyze the development of NMSC in patients hospitalized for various chronic diseases (Jensen *et al.*, 2008). To control for potential surveillance bias, they also evaluated the severity of NMSC diagnosed. Several chronic diseases were associated with increased incidence of NMSC, including an association between BCC and transplantation as well as lymphoma. The risk of squamous cell carcinoma was found to be higher in patients previously hospitalized for leukemia as well as other skin diseases.

Through the following questions, we examine this paper in greater detail. For brief answers, please refer to <http://network.nature.com/group/jidclub>.

REFERENCES

- Frisch M, Melbye M (1995) New primary cancers after squamous cell skin cancer. *Am J Epidemiol* 141:916
- Frisch M, Hjalgrim H, Olsen JH, Melbye M (1996) Risk of subsequent cancer after diagnosis of basal cell carcinoma, a population-based, epidemiologic study. *Ann Intern Med* 125:815
- Hjalgri H, Frisch, M, Storm HH, Glimelius B, Pederson JB, Melbye M (2000) Non-melanoma skin cancer may be a marker for poor prognosis in patients with non-Hodgkin's lymphoma. *Int J Cancer* 85:630
- Hu S, Federman DG, Ma F, Kirsner RS (2005) Skin cancer and non-Hodgkin's lymphoma: examining the link. *Dermatol Surg* 31:76
- Jensen AØ, Olesen AB, Dethlefsen C, Sørensen HT (2006) Ten year mortality in a cohort of nonmelanoma skin cancer patients in Denmark. *J Invest Dermatol* 126:2539
- Jensen AØ, Olesen AB, Dethlefsen C, Sørensen HT, Karagas MR (2008) Chronic diseases requiring hospitalization and risk of non-melanoma skin cancers—a population based study from Denmark. *J Invest Dermatol* 128:926–931**
- Karagas MR, Cushing GL Jr, Greenberg ER, Mott LA, Spencer SK, Nierenberg DW (2001) Non-melanoma skin cancers and glucocorticoid therapy. *Br J Cancer* 85:683
- Saladi RN, Persaud AN (2005) The causes of skin cancer: a comprehensive review. *Drugs Today (Barc)* 41:37

QUESTIONS

1. Why would patients with other conditions be at risk for skin cancer?
2. What is the Charlson index, and how was it used in this study?
3. How did the investigators control for potential bias in this study?
4. What were the major findings of this study?
5. How did the investigators explain their findings?
6. What may be the clinical implications of this article?
7. What future studies would help confirm these hypothesis-generating results?

¹Department of Dermatology and Cutaneous Surgery, University of Miami Miller School of Medicine, Miami, Florida, USA