The Importance of Epidemiological Research on Non-Melanoma Skin Cancer (NMSC): An Overview for Patients

Zaim Haq

Understanding Non-Melanoma Skin Cancer

Non-melanoma skin cancer (NMSC) includes a variety of skin cancers, each with unique causes, appearances, and patterns. The main subtypes of NMSC are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC), which start in the top layers of your skin. However, the impact of NMSC is varied across different populations, with variations in risk factors, incidence, and outcomes. This is where epidemiological research plays a crucial role, shedding light on these differences to help guide early detection and treatment strategies[1, 2, 3].

The Role of Epidemiological Research

Epidemiological research studies the distribution and determinants of diseases within populations. When applied to NMSC, it helps identify who is most at risk, the common factors contributing to the development of these cancers, and the effectiveness of various prevention and treatment strategies. This research is especially vital in understanding how NMSC manifests across diverse populations, including those with skin of color, who may exhibit different symptoms or risk factors compared to individuals with lighter skin[1, 2, 4].

Key Findings from Epidemiological Research

Epidemiological studies have identified key risk factors for NMSC, including UV radiation exposure, genetic predispositions, and environmental factors. For example, research has shown that individuals with lighter skin are at higher risk of BCC and SCC due to their lower levels of melanin, which offers some protection against UV radiation. Patients with darker skin tones are more likely to develop NMSC in areas not typically exposed to the sun, such as the soles of the feet or leg due to chronic inflammation or scarring[3, 4].

When SCC is caused by sun exposure, it generally has a low chance of spreading to other parts of the body, about 1-4%, in Caucasian populations. However, a specific type of SCC that grows in areas of long-term scarring—something seen more often in African American individuals—has a much higher risk of spreading, with rates between 20-40%. For those with skin of color, factors like ongoing inflammation, scars, exposure to certain chemicals, and previous radiation therapy can also increase your risk of getting SCC [3,4,7].

Dermatofibrosarcoma protuberans (DFSP) is a rare and slowly growing type of NMSC that develops in the dermis, the deeper layer of your skin. It usually looks like a firm, raised patch,

which could be mistaken for a simple scar or a dermatofibroma. Though it's not very common, DFSP makes up about 10% of all skin cancer cases in African-American patients. African-American individuals are also seven times more likely to get a type of DFSP called the Bednar tumor, which appears more pigmented and accounts for 1% to 5% of DFSPs. Additionally, DFSP lesions that look like keloids are often found in both African-American and Asian patients[6, 7, 8].

Socioeconomic status, access to healthcare, and education levels also play a role in NMSC outcomes. Epidemiological studies reveal that individuals from lower socioeconomic backgrounds may have reduced access to dermatological care, leading to later diagnoses and poorer outcomes. Understanding these disparities helps develop interventions that ensure all populations receive timely and effective care[3,4].

1. "Nonmelanoma skin cancer: Symptoms & causes." Mayo Clinic. Accessed [March 16, 2024]. https://www.mayoclinic.org/diseases-conditions/nonmelanoma-skin-cancer/symptoms-causes/syc-20355397
2. Amaral T, Garbe C. Non-melanoma skin cancer: new and future synthetic drug treatments. *Expert Opin Pharmacother*. 2017;18(7):689-699. doi:10.1080/14656566.2017.1316372
3. Gloster HM Jr, Neal K. Skin cancer in skin of color. *J Am Acad Dermatol*. 2006;55(5):741-764. doi:10.1016/j.jaad.2005.08.063
4. Bourgeois JC, Beer J, Choi SH, Bitar C. Epidemiology of Chronic Dermatologic Conditions in Skin of Color. *J Drugs Dermatol*. 2023;22(11):e21-e23. doi:10.36849/JDD.7131
5. Nadhan KS, Chung CL, Buchanan EM, et al. Risk factors for keratinocyte carcinoma skin cancer in nonwhite individuals: A retrospective analysis. *J Am Acad Dermatol*. 2019;81(2):373-378. doi:10.1016/j.jaad.2019.01.038
6. Agbai ON, Buster K, Sanchez M, et al. Skin cancer and photoprotection in people of color: a review and recommendations for physicians and the public. *J Am Acad Dermatol*. 2014;70(4):748-762. doi:10.1016/j.jaad.2013.11.038 (DFSP black)
7. Kim M, Huh CH, Cho KH, Cho S. A study on the prognostic value of clinical and surgical features of dermatofibrosarcoma protuberans in Korean patients. *J Eur Acad Dermatol Venereol*. 2012;26(8):964-971. doi:10.1111/j.1468-3083.2011.04190.x
8. Halder RM, Bridgeman-Shah S. Skin cancer in African Americans. *Cancer*. 1995;75(2 Suppl):667-673.

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