Journal of Dermatology Research

ATHENAEUM SCIENTIFIC PUBLISHERS

Editorial

Differences in Melanoma Survival in Hispanic Subpopulations

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Citation: Ramachandran V, et al. Differences in Melanoma Survival in Hispanic Subpopulations. J Dermatol Res. 2023;4(1):1-3.

https://doi.org/10.46889/JDR.2023.4106

Received Date: 23-03-2023

Accepted Date: 08-04-2023

Published Date: 15-04-2023

Editorial

Melanoma can be deadly if not detected and treated early. The association of race with survival in cutaneous malignancies has been researched previously and it has been noted that Hispanic patients have worse melanoma-specific survival compared to non-Hispanic white patients [1]. While research has shown that Hispanic race can be a factor in melanoma survival rates, the specific impact of Hispanic subpopulations on melanoma outcomes is not well understood. In recent years, the Hispanic population in the United States has grown rapidly and is expected to continue to do so in the coming decades. These populations represent diverse individuals from various countries of origins, ethnic backgrounds, and differing cultures. In fact, the Hispanic nomenclature includes diverse worldwide subpopulations and clinical investigations often focus on the ethnic group, resulting in an incomplete characterization of skin malignancies and survival among distinct Latino groups. It is important to understand the unique melanoma survival patterns among different Hispanic subpopulations as these populations are heterogenous.

Herein, we investigated melanoma survival among Hispanic subpopulations using the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) database in comparison to non-Hispanic whites in conjunction with the North American Association of Central Cancer Registries National Hispanic Identification Algorithm.

The SEER-18 registry pools cancer incidence and survival data from 34.6% of the U.S. population 389,920 melanoma cases were extracted (1973-2015) [2]. After applying inclusion criteria (age 18 and above, first malignancy, primary site codes C44.0-44.9 [all skin sites], known cause of death/complete follow-up), the North American Association of Central Cancer Registries National Hispanic Identification Algorithm was used to identify patient ethnicity (defined as Hispanic or non-Hispanic) and specific subpopulation of origin. The North American Association of Central Cancer Registries National Hispanic Identification Algorithm aims to augment existing research databases to provide information on Hispanic subpopulations in an effort to make health services research more inclusive and specific as it pertains to data on Hispanic populations. Hispanics with an unspecified background or identified by surname match only were excluded from the present study. Overall, a total of 246,241 cases were analyzed (mean age 57.35 years ±16.17, mean follow-up 93.03 months). Survival outcomes were assessed via multivariate Cox regression models compared to non-Hispanic whites as reference using IBM SPSS Statistics (Armonk, NY). The adjusted covariates utilized in the study included:

The results, all-cause and cause-specific mortality, are depicted in Table 1.

NHIA Derived Origin	Overall Survival		Cause-Specific Survival	
	HR (95% CI)	*p* - value	HR (95% CI)	*p* - value
Non-Hispanic	ref	ref	ref	ref
Mexican	1.611 (1.478, 1.756)	< .001	1.805 (1.629, 2.000)	< .001
Cuban	.970 (.711, 1.323)	0.847	.831 (.523, 1.321)	0.433
Dominican	1.499 (.749, 2.998)	0.253	1.250 (.403, 3.877)	0.699
Puerto Rican	1.826 (1.437, 2.320)	0.481	2.178 (1.609, 2.949)	< .001
South/Central American (excluding Brazil)	1.146 (.979, 1.342)	0.090	1.273 (1.051, 1.541)	0.013
Other Spanish Origin including Europe	1.509 (1.259, 1.810)	< .001	1.845 (1.435, 2.373)	< .001

Table 1: Adjusted cox regression analysis based off Hispanic origin.

The U.S. has a burgeoning minority population projected to supplant the Caucasian majority by 2045. Of this minority population, Hispanics comprise the largest minority group. Historically, Hispanics from all countries of origin have been grouped together. This categorization fails to recognize heterogeneity within the Hispanic population. This is not just true of everyday life, but is a marked shortcoming in our medical literature in which these individuals are grouped together for statistical analyses. In study, we aim to address this shortcoming for melanoma outcomes in patients of Hispanic origin by delving into a subpopulation analysis of this heterogenous ethnic group. It was noted that all-cause and cause-specific mortality were significantly worse for all Hispanic subpopulations compared to non-Hispanic whites except for Cubans and Dominicans.

There are multiple explanations for such disparities with many more to be uncovered through further research. There is evidence that Hispanic subpopulations vary in genetic ancestry (familial melanoma and polygenic or epigenetic mechanisms may influence the penetrance of melanoma, especially in those with genetic mutation associations), migration history, acculturation (which is defined as assimilation to a different culture, typically the dominant one), environmental exposures (such as carcinogens, pollution), and behavioral and lifestyle practices [3,4]. Fitzpatrick skin type classifications have been shown to vary for subpopulations, with a variable presence of higher risk skin types in Mexican and Puerto Rican groups, which is similar to what our findings have reflected in terms of worse survival outcomes in these populations [5]. These biopsychosocial mechanisms may not only contribute to melanoma risk, but also clinical outcomes. For instance, sunbathing is an acceptable practice in some subpopulations of Hispanic culture (e.g., European), possibly stemming from a false perception of skin cancer risk. Not only do severe sunburns increase melanoma risk, but there is growing evidence of ultraviolet signature mutations associated with melanoma risk, which is a divergence from the commonly-held belief that melanoma is not associated with ultraviolet light exposure [6]. As such, these cultural practices may eventually manifest in late-stage presentation and subsequent poor survival.

Limitations include self-reported race, data entry errors, inability to account for lifestyle and modifiable risk factors, and a retrospective design. Furthermore, SEER only allows for retrospective analyses to be conducted. Nevertheless, this is the first study to assess survival disparities by Hispanic subpopulation, laying a foundation for future investigation to build upon our framework and findings.

In conclusion, the study of Hispanic subpopulations is crucial for improving our understanding of skin cancers and conditions, particularly in the context of melanoma survival outcomes as well as other skin cancers. The Hispanic population is diverse and heterogeneous, with unique genetic, environmental, and cultural factors that can impact cancer risk, prevention, and treatment. By focusing on specific subgroups within this population, we can identify patterns and variations that may not be evident in larger racial or ethnic categories. This approach can help us to develop more targeted prevention and treatment strategies that are tailored to the needs of individual patients, improving their chances of survival and quality of life. Moreover, this approach can help to address health disparities and inequities that may exist within the Hispanic population. This is particularly important given the projected growth of the Hispanic population in the United States and the potential for disparities to worsen if they are not addressed.

Moving forward, it may be prudent to implement standardized demographic subgroups for Hispanics in clinic and in research studies via intake questionnaires. Increased physician awareness of disparities amongst Hispanic communities and individualizing care to address biopsychosocial parameters influencing skin cancer care is advisable.

Keywords: Hispanic; Subpopulation; Melanoma; Survival; Disparities; Latino; Outcomes; Cancer

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Conflict of Interest

The authors have no conflict of interest to declare.

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