

Melanoma in US Hispanics: Recommended Strategies to Reduce Disparities in Outcomes

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PRACTICE POINTS

- Although the age-adjusted incidence of melanoma among US Hispanics is lower than among non-Hispanic whites, Hispanics with melanoma are more likely to present with stage III disease and have distant metastases.
- Late presentation of melanoma in Hispanics is not completely understood but may be attributed to socioeconomic factors, lack of skin cancer awareness and knowledge, lower rate of self- and physician-performed skin examinations, and differences in tumor biology, among other variables.
- Research is needed to address gaps in knowledge about the risk of melanoma and comparatively poor outcomes among Hispanics so interventional efforts for prevention, early detection, and treatment can be implemented.

Cutaneous melanoma is the most fatal form of skin cancer and presents a considerable public health concern in the United States. Although the age-adjusted incidence of melanoma among US Hispanics is lower than that of non-Hispanic whites (NHWs), Hispanics who are diagnosed with melanoma are more likely to present with thicker primary tumors, metastatic disease, and lower 5-year melanoma-specific survival rates than NHWs. Melanoma risk factors and reasons for late presentation among Hispanics are not completely understood. In this review, the epidemiology and clinical presentation of melanoma in Hispanics is summarized, and recommendations for a research agenda to advance understanding of this disease in the most rapidly growing segment of the US population is provided.

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Cutaneous melanoma is a considerable public health concern. In the United States, an estimated 87,110 cases were diagnosed in 2017, and more than 9000 deaths are expected as result of this disease in 2018.¹ Early diagnosis of melanoma is associated with favorable survival rates (5-year overall survival rates for melanoma in situ and stage IA melanoma, 99% and 97%, respectively).² In contrast, the prognosis for advanced-stage melanoma is poor, with a 5-year survival rate of 16% for patients with stage IV disease. Therefore, early detection is critical to reducing mortality in melanoma patients.³

The term *Hispanic* refers to a panethnic category primarily encompassing Mexican-Americans, Cubans, and Puerto Ricans, as well as individuals from the Caribbean and Central and South America. These populations are diverse in birth origin, primary language, acculturation, distinct ethnic traditions, education level, and occupation. Hispanics in the United States are heterogeneous in many dimensions related to health risks, health care use, and health outcomes.⁴ Genetic predisposition, lifestyle risks, and access to and use of health care services can shape melanoma diagnosis, treatment, and progression across Hispanic populations differently than in other populations.

In this review, the epidemiology and clinical presentation of melanoma in US Hispanics is summarized, and recommendations for a research agenda to advance understanding of this disease in the most rapidly growing segment of the US population is provided.

Melanoma Incidence, Presentation, and Outcomes in US Hispanics

In the period from 2008 to 2012, the age-adjusted incidence of melanoma in US Hispanics (4.6 per 100,00 men

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and 4.2 per 100,000 women) was lower than in NHWs.⁵ Garnett et al⁵ reported a decline in melanoma incidence in US Hispanics between 2003 and 2012—an observation that stands in contrast to state-level studies in California and Florida, in which small but substantial increases in melanoma incidence among Hispanics were reported.^{6,7} The rising incidence of melanomas thicker than 1.5 mm at presentation among Hispanic men living in California is particularly worrisome.⁶ Discrepancies in incidence trends might reflect changes in incidence over time or differences in state-level registry reporting of melanoma.⁵

Despite a lower overall incidence of melanoma in US Hispanics, those who do develop the disease are 2.4 times more likely (age-adjusted odds ratio) to present with stage III disease (confidence interval, 1.89–3.05)⁸ and are 3.64 times more likely to develop distant metastases (confidence interval, 2.65–5.0) than NHWs.^{3,7,9–13} Disparities also exist in the diagnosis of childhood melanoma: Hispanic children and adolescents who have a diagnosis of melanoma are 3 times more likely to present with advanced disease than NHW counterparts.¹⁴ Survival analyses by age and stage show considerably lower survival among Hispanic patients compared to NHW patients with stage I and II disease. In part, worse survival outcomes among Hispanics are the result of the pattern of more advanced disease at presentation.^{8,14,15}

Late presentation for evaluation of melanomas in Hispanics has been attributed to a number of variables, including a lack of skin cancer awareness and knowledge,^{9,16} a lower rate of self- and physician-performed skin examinations,¹⁰ differences in tumor biology,⁹ and socioeconomic forces.^{7,17}

In a previous study investigating the relationship between neighborhood characteristics and tumor stage at melanoma diagnosis in Hispanic men in California, Texas, and Florida, several key findings emerged.¹⁷ First, residency in a census tract with a high density of immigrants (California, Texas) and a high composition of Hispanics (California, Florida) was an important predictor of a late-stage melanoma diagnosis in fully adjusted models. Additionally, the strength of association between measures of socioeconomic status (ie, poverty and education) and tumor stage at melanoma diagnosis was attenuated in multivariate models when enclaves and availability of primary care resources were taken into account. Hispanic melanoma cases in areas with a low density of primary care physicians had an increased likelihood of late-stage diagnosis in California and Texas. The probability of late-stage diagnosis was concentrated in specific regions along the United States–Mexico border, in south central California, and along the southeastern coast of Florida. Lastly, in Texas, Hispanic men aged 18 to 34 years and 35 to 49 years were at an increased risk of late-stage melanoma diagnosis compared to men 65 years and older.¹⁷

Demographic and Clinical Characteristics of Melanoma in Hispanic Patients

Among Hispanics, white Hispanics comprise the majority of melanoma cases.⁵ Median age at diagnosis is younger in Hispanics compared to whites.^{5,6} Hispanic men typically are older (median age, 61 years) than Hispanic women (median age, 52 years) at diagnosis.⁵ Similar to what is seen in NHWs, young Hispanic women experience a higher melanoma incidence than young Hispanic men.⁵ Among older Hispanics, melanoma is more common in men.^{5,8}

Melanomas located on the lower extremities and hips are more prevalent in Hispanics than in NHWs.^{5,8,18} Among Hispanics, there are age- and sex-based variations in the anatomic location of primary tumors: in Hispanic men, truncal tumors predominate, and in Hispanic women, tumors of the lower extremities are most common across all age groups.⁵ The incidence of melanomas located in the head and neck region increases with age for both Hispanic men and women.

For melanomas in which the histologic type is known, superficial spreading melanoma is the most common subtype among Hispanics.^{5,17,19} Acral lentiginous melanomas and nodular melanomas are more common among Hispanics than among NHWs.^{5,17,19}

The observation that Hispanics with melanoma are more prone to lower-extremity tumors and nodular and acral lentiginous melanoma subtypes than NHWs suggests that UV exposure history may be of less importance in this population. Although numerous studies have explored melanoma risk factors in NHWs, there is a striking paucity of such studies in Hispanics. For example, there are conflicting data regarding the role of UV exposure in melanoma risk among Hispanics. Hu et al²⁰ found that UV index and latitude correlated with melanoma risk in this population, whereas Eide et al²¹ found no association between UV exposure and melanoma incidence in Hispanics. A prospective study involving a multiethnic cohort (of whom 40 of the 107 participants were Hispanic) found no clear association between a history of sunburn and melanoma risk in Hispanics.¹⁸

Strategies for Reducing Disparities in Outcomes

Our knowledge of melanoma epidemiology in Hispanics derives mainly from secondary analyses of state-level and national cancer registry data sets.^{5–8,13–15,17,19,20} These administrative data sources often are limited by missing data (eg, tumor thickness, histologic subtype) or lack important patient-level information (eg, self-identified race and ethnicity, health insurance status). Additionally, the manner in which data are collected and integrated into research varies; for example, socioeconomic measures often are reported as either area-based or composite measures. Thus, there is a need to improve the consistency of reporting on demographic and socioeconomic measures across studies. Polite et al²² recommended

standardization of reporting criteria and that a standard set of demographic and socioeconomic status measures be included in clinical registries and research protocols.²² Researchers should strive to collect self-reported information on race and ethnicity, as well as the most granular level of detail on health insurance status, ancestry, and immigration status.

The host phenotypic characteristics of melanoma in NHWs are well understood, but the biological and environmental determinants of melanoma risk in Hispanics and other minorities are unknown. For example, fair complexion, red hair, blue eyes, increased freckling density, and the presence of numerous dysplastic and common melanocytic nevi indicate a propensity toward cutaneous melanoma.^{23,24} However, the relevance of such risk factors in Hispanics is unknown and has not been widely investigated in this patient population. Park et al¹⁸ found that a person's sunburn susceptibility phenotype (defined as hair and eye color, ability to tan, and skin reaction to sunlight) was associated with an increased risk of melanoma among nonwhite, multiracial individuals. However, this study was limited by a small number of minority cases, which included only 40 Hispanic participants with melanoma.¹⁸ There is a need for rigorous observational studies to clearly define the phenotypic characteristics, sun-exposure behavior patterns, and genetic contributors to melanoma genesis in Hispanics.

The biologic determinants of postdiagnosis survival in Hispanics with melanoma are not well understood. It is unknown if genetic predisposition modifies melanoma risk in Hispanics. For example, the frequency of BRAF gene mutation or other driver mutations in US Hispanics has been understudied. It is important to know if mutation frequency patterns differ in Hispanic patients compared to NHWs because this knowledge could have considerable implications for treatment. Several recommendations should be considered to address these knowledge gaps. First, there is a need for development or enhancement of melanoma biorepositories, which should include tumor and nontumor specimens from a diverse sample of melanoma patients. Additionally, multi-institutional and multidisciplinary consortiums need to be created in order to amass a number of Hispanic melanoma patients to identify genetic, biologic, and behavioral risk factors specific to this subgroup of patients. The AMBER Consortium, which focuses on breast cancer epidemiology and risk in black women, is a model for the type of consortium needed for the study of melanoma in Hispanics.²⁵ Lastly, community engagement will be central to developing sustainable recruitment and data-collection efforts.²⁶ Involvement of key stakeholders will provide an in-depth assessment of community needs as well as real-time feedback on the process and practicality of research questions. Buy-in from affected communities also may facilitate dissemination of research findings to affected communities.

Conclusion

Hispanics are more likely to present with an advanced stages of disease and have higher melanoma-specific mortality rates than NHWs. Regrettably, a huge knowledge gap exists regarding contributors and solutions to melanoma disparities among this fast-growing, understudied segment of the US population. Accordingly, critical research is needed to address the most pressing questions regarding melanoma risk and poor outcomes among Hispanics to foster implementation of interventional efforts in prevention, early detection, and treatment. A multi-institutional and multidisciplinary approach across multiple levels is needed to eliminate disparate outcomes. Although melanoma is relatively uncommon among Hispanics, studies of melanoma in Hispanics (given their diverse genetic ancestry and migration) provide a unique backdrop against which researchers can explicate melanoma etiology—thus benefiting Hispanics and non-Hispanics alike.

REFERENCES

1. American Cancer Society. Key statistics for melanoma skin cancer. www.cancer.org/cancer/melanoma-skin-cancer/about/key-statistics.html. Accessed January 13, 2018.
2. Balch CM, Gershenwald JE, Soong S, et al. Final version of 2009 AJCC melanoma staging and classification. *J Clin Oncol*. 2009; 27:6199-6206.
3. Katalinic A, Waldmann A, Weinstock MA, et al. Does skin cancer screening save lives? *Cancer*. 2012;118:5395-5402.
4. Bergad LW, Klein HS. *Hispanics in the United States: A Demographic, Social, and Economic History, 1980-2005*. New York, NY: Cambridge University Press; 2010.
5. Garnett E, Townsend J, Steele B, et al. Characteristics, rates, and trends of melanoma incidence among Hispanics in the USA. *Cancer Causes Control*. 2016;27:647-659.
6. Pollitt RA, Clarke CA, Swetter SM, et al. The expanding melanoma burden in California Hispanics: importance of socioeconomic distribution, histologic subtype, and anatomic location. *Cancer*. 2011;117:152-161.
7. Hu S, Parnet Y, Allen G, et al. Disparity in melanoma: a trend analysis of melanoma incidence and stage at diagnosis among whites, Hispanics, and blacks in Florida. *JAMA Dermatology*. 2010;145:1369-1374.
8. Cormier JN, Xing Y, Ding M, et al. Ethnic differences among patients with cutaneous melanoma. *Arch Intern Med*. 2006;166:1907-1914.
9. Pollitt RA, Swetter SM, Johnson TM, et al. Examining the pathways linking lower socioeconomic status and advanced melanoma. *Cancer*. 2012;118:4004-4013.
10. Ortiz CA, Goodwin JS, Freeman JL. The effect of socioeconomic factors on incidence, stage at diagnosis and survival of cutaneous melanoma. *Med Sci Monit*. 2005;11:RA163-RA172.
11. Singh SD, Ajani UA, Johnson CJ, et al. Association of cutaneous melanoma incidence with area-based socioeconomic indicators—United States, 2004-2006. *J Am Acad Dermatol*. 2011;65(5 suppl 1):S58-S68.
12. Pollitt RA, Clarke CA, Shema SJ, et al. California Medicaid enrollment and melanoma stage at diagnosis: a population-based study. *Am J Prev Med*. 2008;35:7-13.
13. Clairwood M, Ricketts J, Grant-Kels J, et al. Melanoma in skin of color in Connecticut: an analysis of melanoma incidence and stage at diagnosis in non-Hispanic blacks, non-Hispanic whites, and Hispanics. *Int J Dermatol*. 2014;53:425-433.
14. Hamilton EC, Nguyen HT, Chang YC, et al. Health disparities influence childhood melanoma stage at diagnosis and outcome. *J Pediatr*. 2016;175:182-187.
15. Dawes SM, Tsai S, Gittleman H, et al. Racial disparities in melanoma survival. *J Am Acad Dermatol*. 2016;75:983-991.

16. Imahiyerobo-Ip J, Ip I, Jamal S, et al. Skin cancer awareness in communities of color. *J Am Acad Dermatol*. 2011;64:198-200.
17. Harvey VM, Enos CW, Chen JT, et al. The role of neighborhood characteristics in late stage melanoma diagnosis among Hispanic men in California, Texas, and Florida, 1996-2012 [published online June 18, 2017]. *J Cancer Epidemiol*. 2017;2017:8418904.
18. Park SL, Le Marchand L, Wilkens LR, et al. Risk factors for malignant melanoma in white and non-white/non-African American populations: the multiethnic cohort. *Cancer Prev Res*. 2012;5:423-434.
19. Wu XC, Eide MJ, King J, et al. Racial and ethnic variations in incidence and survival of cutaneous melanoma in the United States, 1999-2006. *J Am Acad Dermatol*. 2011;65(5 suppl 1):S26-S37.
20. Hu S, Ma F, Collado-Mesa F, et al. UV radiation, latitude, and melanoma in US Hispanics and blacks. *Arch Dermatol*. 2004;140:819-824.
21. Eide MJ, Weinstock MA. Association of UV index, latitude, and melanoma incidence in nonwhite populations—US Surveillance, Epidemiology, and End Results (SEER) program, 1992 to 2001. *Arch Dermatol*. 2005;141:477-481.
22. Polite BN, Adams-Campbell LL, Brawley OW, et al. Charting the future of cancer health disparities research: a position statement from the American Association for Cancer Research, the American Cancer Society, the American Society of Clinical Oncology, and the National Cancer Institute. *Cancer Res*. 2017;77:4548-4555.
23. Gandini S, Sera F, Cattaruzza MS, et al. Meta-analysis of risk factors for cutaneous melanoma: III. family history, actinic damage and phenotypic factors. *Eur J Cancer*. 2005;41:2040-2059.
24. Chang YM, Newton-Bishop JA, Bishop DT, et al. A pooled analysis of melanocytic nevus phenotype and the risk of cutaneous melanoma at different latitudes. *Int J Cancer*. 2009;124:420-428.
25. Palmer JR, Ambrosone CB, Olshan AF. A collaborative study of the etiology of breast cancer subtypes in African American women: the AMBER consortium. *Cancer Causes Control*. 2014;25:309-319.
26. Rapkin BD, Weiss E, Lounsbury D, et al. Reducing disparities in cancer screening and prevention through community-based participatory research partnerships with local libraries: a comprehensive dynamic trial. *Am J Community Psychol*. 2017;60:145-159.