

## Skin Cancer in Skin of Color

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Differences exist in the epidemiology, clinical presentation, and prognosis of skin cancers in skin of color populations. Among Hispanics and black individuals, detection of skin cancers, including both melanoma and nonmelanoma skin malignancies, often is delayed.<sup>1</sup> As a result, there is a poorer overall prognosis for skin cancers among nonwhites compared to non-Hispanic whites. Factors that likely contribute to the delayed diagnosis of skin cancers in patients with skin of color include decreased access to care, fewer preventative measures, and public and medical misconceptions about who is affected by skin cancer.

### Epidemiology

**Melanoma**—Melanoma is the third most common skin cancer in all ethnic groups. It represents 1% to 8% of all skin cancers in black individuals, 10% to 15% of skin cancers in Asian Indians (ie, South Asians), and 12% to 19% of all skin cancers in Japanese.<sup>2</sup> Among Hispanics, the age-adjusted incidence rates for melanoma are estimated at 4.5 per 100,000, and for black individuals, it is approximately 1.0 per 100,000.<sup>3</sup> The rates of invasive melanoma have markedly increased among Hispanics in California since 1988, with a 1.8% per year increase in incidence of invasive melanomas among Hispanic males between 1988 and 2001, and a 7.3% annual increase in the period between 1996 and 2001.<sup>4</sup> Rouhani et al<sup>5</sup> analyzed data from the Florida Cancer Data System and Surveillance, Epidemiology and End Results (SEER) to determine age-adjusted, race/ethnicity, and sex-specific invasive cutaneous melanoma incidence trends for 1992-2004 (N=109,633). They reported that the incidence of melanoma among male Hispanic patients residing in Florida was 20% higher than their male counterparts in the SEER cohort. However, the incidence of melanoma among female Hispanic patients residing in Florida was significantly lower than the SEER cohort. A difference also was seen in melanoma incidence in

female non-Hispanic black (NHB) patients in Florida who had a 60% higher incidence of melanoma compared to female NHB patients in the SEER cohort.<sup>5</sup>

**Squamous Cell Carcinoma**—Squamous cell carcinoma (SCC) represents the most common cutaneous malignancy in black individuals and Asian Indians,<sup>2</sup> though it is the second most common cutaneous neoplasm in white individuals. Squamous cell carcinoma is the second most common skin cancer in populations of intermediate pigmentation, such as the Chinese and Japanese,<sup>6</sup> with the incidence of SCC among Chinese Asians ranging from 2.6 to 2.9 per 100,000.

**Basal Cell Carcinoma**—Basal cell carcinoma (BCC) represents the most common cutaneous malignancy in the white, Hispanic, Chinese, and Japanese populations,<sup>7</sup> and it represents the second most common malignancy in black individuals and South Asians.<sup>8</sup> The incidence of BCC in various populations has been comprehensively reviewed by Gloster and Neal<sup>2</sup> with reported rates as follows: black men, 1 per 100,000; black women, 2 per 100,000; Kenyan Africans (men and women), 0.065 per 100,000<sup>9</sup>; Chinese men, 6.4 per 100,000; Chinese women, 5.8 per 100,000<sup>10</sup>; Japanese (men and women), 15–16.5 per 100,000<sup>11</sup>; Japanese residents of Kauai, Hawaii, 29.7 per 100,000<sup>12</sup>; Japanese residents of Okinawa, 26.1 per 100,000<sup>11</sup>; New Mexican Hispanic men, 171 per 100,000; New Mexican Hispanic women, 113 per 100,000<sup>13</sup>; Southeastern Arizona Hispanic women, 50 per 100,000; Southeastern Arizona Hispanic men, 91 per 100,000<sup>14</sup>; white men, 250 per 100,000; white women, 212 per 100,000; and white individuals in Kauai, Hawaii, 185–340 per 100,000.<sup>15</sup>

### Clinical Presentation and Overall Prognosis

**Melanoma**—Melanomas in black individuals, Asians, Filipinos, Indonesians, and Native Hawaiians most frequently arise on non-sun-exposed skin.<sup>16</sup> Acral areas and mucous membranes are the most common sites of melanoma in richly pigmented populations. Acral melanomas constitute the greatest proportion of melanomas in the nonwhite populations.<sup>16,17</sup> Subungual melanomas also are a particular concern for darker skin phototypes.<sup>18</sup>

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Hispanic and black individuals tend to present with more advanced, thicker tumors, and thus tend to have a poorer prognosis with higher mortality compared to white patients.<sup>19</sup> Bradford et al<sup>20</sup> reported that the acral lentiginous melanoma 5- and 10-year melanoma-specific survival rates were 80.3% and 67.5%, respectively, which were less than the overall rates for cutaneous malignant melanomas (91.3% and 87.5%, respectively;  $P < .001$ ). The acral lentiginous melanoma 5- and 10-year melanoma-specific survival rates were highest in non-Hispanic white individuals (82.6% and 69.4%, respectively), intermediate in black individuals (77.2% and 71.5%, respectively), and lowest in Hispanic white individuals (72.8% and 57.3%, respectively) and Asian/Pacific Islanders (70.2% and 54.1%, respectively).<sup>20</sup> In a retrospective review of case reports from the Florida Cancer Data System, Hu et al<sup>21</sup> showed that higher-stage melanomas were more common among Hispanic (26%) and black patients (52%) compared to white patients (16%).

It is estimated that nonwhite patients are 1.96 to 3.01 times more likely to die from melanoma than age- and sex-matched white patients.<sup>1,10,16,22</sup> After adjustments for age, sex, histology, stage, anatomic site, treatment, and socioeconomic status, Zell et al<sup>23</sup> reported a statistically significant (hazard ratio, 1.60; 95% confidence interval, 1.17-2.18) increased risk for death from melanoma in black individuals compared to white individuals. Therefore, the poor survival outcomes for black patients with melanoma are not solely caused by socioeconomic differences, and more attention must be placed on preventative measures in skin of color populations.<sup>24</sup>

**Squamous Cell Carcinoma**—For SCCs in darker skin phototypes, important differences exist regarding anatomic location, risk factors, and prognosis.

In a study (1947-1985) at Howard University Hospital, Washington, DC, of 43 black patients with cutaneous SCC, 65% of patients had lesions on non-sun-exposed skin including the legs; 23% of the SCCs in women occurred on the anus.<sup>25</sup> A review of the Tanzania Cancer Registry, Dar es Salaam, found SCC to be the most common skin malignancy with its peak at 40 to 49 years of age. The sites most often involved were the lower limb, followed by the head and neck.<sup>26</sup> In black individuals, SCC may present in the anogenital area in 10% to 23% of cases.<sup>27</sup>

Therefore, UV radiation seems to be a less-frequent predisposing factor for SCC in skin of color populations. More common risk factors among nonwhite populations include scars from thermal and chemical burns (chemical carcinogens),<sup>28</sup> chronic lower-extremity ulcers, radiation exposure, chronic

severe inflammatory conditions, and immunosuppression.<sup>2,29</sup> Squamous cell carcinoma associated with chronic ulcerative or scarring processes frequently is more aggressive than actinically induced SCCs, with a reported metastasis rate of 20% to 40% versus 1% to 4% in sun-induced SCCs in white individuals.<sup>30,31</sup> Therefore, there should be a low threshold to biopsy any nonhealing ulcers or nodules arising in association with chronic ulcerative processes.<sup>32</sup>

A disparity also exists in metastatic rates of SCC between skin of color and white populations, which may be due to a more aggressive tumor or a more advanced disease state at the time of presentation from delayed diagnosis.<sup>31</sup>

This disparity underscores the need for a heightened awareness of the physician and patient, as SCCs in nonwhite populations are associated with increased morbidity and mortality, especially in blacks.<sup>31</sup>

**Basal Cell Carcinoma**—Basal cell carcinoma most often occurs after the fifth decade on sun-exposed areas of the head and neck, independent of the degree of pigmentation of the host skin.<sup>33</sup> Basal cell carcinoma formation is lower in darker phototypes because of the inherent photoprotection of melanin and melanosome dispersion.

More than 50% of BCCs in black individuals, Hispanics, and Japanese are pigmented compared to 6% in white individuals.<sup>34</sup> A characteristic feature reported in Asian patients is a black pearly appearance.<sup>35,36</sup> Telangiectasia and a pearly rolled border in dark skin phototypes or in a pigmented tumor may be difficult to clinically appreciate.

## Comment

Improved efforts are needed to educate skin of color populations about the risk for skin cancer. Patients with skin of color are presenting with more advanced skin malignancies and often a delayed diagnosis, leading to an overall poorer prognosis and increased morbidity and mortality that may be attributed to a decreased risk perception by certain ethnic demographics as well as the treating physicians.

The lack of awareness or concern also may lead the patient to less-preventative strategies and avoidance of risk factors. Summers et al<sup>37</sup> studied the patterns of sunscreen use in different ethnic and racial populations and found that NHBs had a similar likelihood of not wearing sunscreen, even if they had a propensity for severe sunburn. The authors showed that sunscreen use correlated with female gender, higher income, and higher education. It was postulated that lower sunscreen use by NHBs could be explained by underlying cultural differences and limited knowledge of skin cancer.<sup>37</sup> In another study,

70% of NHBs—14% who experienced burns—were not aware that NHBs can develop skin cancer.<sup>38</sup> Kim et al<sup>39</sup> surveyed NHBs and found that 43% had the propensity to sunburn, yet only 35% felt that they were at risk for skin cancer development (N=100). However, acknowledgment of the risk for skin cancer did not influence their sun protection behavior.<sup>39</sup>

The lack of sunscreen use by NHBs, and possibly other ethnicities, may arise from lack of awareness and a lack of directed education. Prior national dermatology screening and education programs have only included 1.2% NHBs.<sup>40</sup> Additionally, Lee et al<sup>41</sup> reported that magazines with predominantly white readers had 5 times as many sun protection ads as magazines marketed toward NHBs.

Pipitone et al<sup>42</sup> compared Hispanics and non-Hispanics who possessed similar access to healthcare and reported that the Hispanic cohort performed fewer skin self-examinations. Echoed in the adolescent population, Hispanic white high school students were 60% less likely than non-Hispanic white students to have heard of skin self-examinations and 70% less likely to have ever been told to perform one.<sup>43</sup> Even more concerning was the low index of suspicion of healthcare providers. The 1992, 1998, and 2000 National Health Interview Surveys showed that Hispanics were screened for skin cancer less frequently than non-Hispanic white patients. Of the patients surveyed (N=3666), only 3.7% of Hispanic whites had a recent full-body skin examination by a physician compared to 8.9% of the non-Hispanic whites surveyed.<sup>44</sup> Rodriguez et al<sup>45</sup> (N=426) also reported that only 16.2% of black patients and 17.1% of Hispanic patients had received full-body skin examinations by their primary care physicians compared to 25.5% of non-Hispanic white patients surveyed.

These disparities in healthcare education and utilization demonstrate the need for increased skin cancer awareness and promotion among skin of color populations. As healthcare providers, it is important to stress early screening, prevention, and diagnosis of cutaneous skin malignancies in all patients irrespective of constitutive skin pigmentation.

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## QUICK POLL QUESTION

Do you feel that current patient education materials adequately inform about the risk for acral and mucosal melanomas?

- Yes
- No

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