Comparison of Stage at Diagnosis of Melanoma Among Hispanic, Black, and White Patients in Miami-Dade County, Florida

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Objective: To compare stage at diagnosis of melanoma between non-Hispanic white, non-Hispanic black, and Hispanic patients.

Design: Retrospective analysis.

Setting: Melanoma cases reported to the Florida Cancer Data System, with known stage and race/ethnicity information, for residents of Miami-Dade County, Florida, from 1997 to 2002.

Patients: Those diagnosed as having melanoma according to the Florida Cancer Data System.

Main Outcome Measure: Stage of melanoma at diagnosis.

Results: Of the 1690 melanoma cases reported with both stage and race/ethnicity information, 1176 (70%) were among non-Hispanic white patients, 485 (29%) were among Hispanic patients of any race, and 29 (2%) were among non-Hispanic black patients. Late-stage (regional and distant) diagnosis was more common among Hispanic (26%) and non-Hispanic black patients (52%) compared with non-Hispanic white patients (16%) (P < .001).

Conclusion: Advanced stage of melanoma diagnosis among Hispanic and black patients suggests suboptimal secondary prevention efforts in minority populations.

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Hispanic black persons (NHBs) (including rules for coding multiple primary tumors). The FCDS lance, Epidemiology, and End Results (SEER) program, in- cer reporting follows the standards specified by the Surveil-

RACE/ETHNICITY DEFINITION AND STUDY POPULATION

The terms Hispanic and Latino are used interchangeably by the US Census Bureau to identify people who indicate that they originate from a Spanish-speaking country. Hispanic/Latino is considered an ethnicity in both US census and FCDS data. A person of Hispanic origin may be of any race or heritage. In the United States, most Hispanic people (65%) are of Mexican ancestry and 23% are of other Hispanic/Latino ancestry, followed by Puerto Rican (9%) and Cuban (3%). In Miami-Dade County, most Hispanic/Latino people (51%) are of Cuban ancestry, with only 4% of Mexican ancestry, 7% of Puerto Rican ancestry, and 38% of other Hispanic/Latino ancestry. To describe melanoma cases in Miami-Dade County in meaningful subgroups, 3 mutually exclusive race/ethnicity categories are used in this study: NHW, NHB, and Hispanic (of any race).

The FCDS reports data on Hispanic origin as recorded by the hospital tumor registry (eg, based on country of birth and ethnicity reported in the patient’s medical record or death certificate). For cases and deaths reported without Hispanic origin information, Hispanic ethnicity is imputed based on surname or maiden name. Quality control in classification of ethnicity by the FCDS is considered extremely good because of the large Hispanic presence in South Florida and periodically conducted registry quality control procedures.

STATISTICAL ANALYSIS

The software program SPSS, version 12.0 (SPSS Inc, Chicago, Ill), was used to analyze the data. Pearson χ² tests were performed to detect differences in the stage distribution of melanoma among NHW, NHB, and Hispanic populations.

RESULTS

MELANOMA STAGE AT DIAGNOSIS

A total of 1893 melanoma cases with stage information were reported in Miami-Dade County between 1997 and 2002. After excluding 203 cases with unknown race or ethnicity, 1690 cases were left: 1176 cases (70%) in
Several limitations should be considered in interpreting these data. The accuracy of ethnicity data, especially those for cancer rates in women, is limited by the method of ascertaining Hispanic ethnicity. The FCDS uses both surname and maiden name to impute Hispanic ethnicity when self-reported race/ethnicity is lacking. However, when maiden names are not available, misclassification of true ethnic background may occur for women who acquire Spanish or non-Spanish surnames through marriage. Melanoma rates by race/ethnicity also do not permit conclusions to be drawn with respect to constitutive skin pigmentation or Fitzpatrick skin type; heterogeneity in skin pigmentation exists among Hispanic and black individuals, and there is no established correlation between skin color or Fitzpatrick skin type by ethnicity. Finally, data on tumor (Breslow) depth are not yet available from the FCDS and therefore are not available for analysis.

**STUDY LIMITATIONS**

From 1997 to 2002, both Hispanic persons and NHBs residing in Miami-Dade County had a more advanced stage of melanoma at presentation compared with NHWs. Overall, 16% of Hispanic persons and 31% of NHBs already had melanoma that had metastasized at diagnosis, compared with only 9% of NHWs (P<.001). The racial disparity in stage at diagnosis of malignant melanoma noted in this study is comparable to that in previous reports. Byrd et al recently reported a higher percentage of late-stage diagnoses (regional and distant) among black persons (32%) compared with white persons (13%) in Washington, DC (N=469). This is similar to national data reported by the SEER program, in which 32% of melanoma cases in black patients were diagnosed at late stage compared with 14% of melanoma cases in white patients (1995-2001). We reported differences in late-stage diagnosis between black and white patients in Miami-Dade County: 48% and 22%, respectively. The overall more advanced melanoma in Miami-Dade County calls for better secondary prevention in the region.

One study examined stage at diagnosis of melanoma among Hispanic patients at Jackson Memorial Hospital, a large public hospital in Miami-Dade County, from 1977 to 1986. Of the 376 melanoma cases reviewed, 54 patients were classified as Hispanic. Sixty-seven percent of melanoma cases in Hispanic patients were diagnosed at the local stage and 26% at the regional or distant stage. These percentages are comparable to those reported in this study using the FCDS data for Miami-Dade County. However, unlike our study, no significant differences in stage at diagnosis were found between Hispanic and non-Hispanic patients, which may reflect either the sample size studied or inadequate division of population subgroups, because non-Hispanics encompassed both white and black patients in that study. Our findings, with a larger sample size and more comprehensive reporting in the FCDS, are likely a more accurate and certainly more current representation of melanoma epidemiologic features within the county.

The difference that we found in melanoma stage between Hispanic patients and NHWs is similar to that in 2 other reports that described delayed diagnosis of melanoma among US Hispanic persons. An analysis of 81 melanoma cases from the New Mexico Melanoma Registry and New Mexico Tumor Registry between 1970 and 1986 found that a greater percentage (36%) of Hispanic patients had melanoma 2 mm or thicker in depth than NHWs (16%). A study that used California Cancer Registry data (1988-1993) evaluated 361 cases of invasive melanoma diagnosed in Hispanic patients and found that Hispanic persons (23%) were twice as likely to present with regional- or distant-stage melanoma than NHWs (P<.01). Despite the inherent limitations of classifying Hispanic race/ethnicity within all registry-based cancer data, the consistent findings of more advanced melanoma presentation from large registry data support the validity of this trend.

Although the disparity in stage at presentation for melanoma in Hispanic persons and NHWs is less notable than that in NHBs and NHWs in Miami-Dade County, it nonetheless highlights an increasingly significant public health concern. Hispanic persons are among the fastest-growing minority groups in the United States; the Hispanic population has increased more than 50% since 1990 and is projected to reach 17% of the total US population by 2020. Moreover, the incidence of melanoma in Hispanic individuals has

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**Table 2. Summary of Melanoma Diagnosed in Miami-Dade County, Florida, 1997-2002**

<table>
<thead>
<tr>
<th>Stage at Diagnosis</th>
<th>Non-Hispanic White (n = 1176)</th>
<th>Non-Hispanic Black (n = 29)</th>
<th>Hispanic (All Races) (n = 485)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In situ</td>
<td>314 (27)</td>
<td>3 (10)</td>
<td>106 (22)</td>
</tr>
<tr>
<td>Local</td>
<td>674 (57)</td>
<td>11 (38)</td>
<td>252 (52)</td>
</tr>
<tr>
<td>Regional</td>
<td>82 (7)</td>
<td>6 (21)</td>
<td>52 (11)</td>
</tr>
<tr>
<td>Distant</td>
<td>106 (9)</td>
<td>9 (31)</td>
<td>75 (16)</td>
</tr>
</tbody>
</table>

*Data are from the Florida Cancer Data System (N = 1690; Χ² = 42.5; P < .001).*
services and treatment, thus contributing to current dis-
insurance, influence access to and use of cancer screening
tors, such as socioeconomic status, skin cancer aware-
resources are likely influenced by a complexity of fac-
lish Hispanic persons with similar access to health care, it was
found that awareness of melanoma and nonmelanoma
skin cancer and perception of risk among Hispanic indi-
viduals were less than among non-Hispanic persons.
Hispanic individuals also performed skin examinations
less frequently and did not know the clinical signs of skin
cancer.4 In Miami-Dade County, a recent survey of high
school students found that Hispanic students are more
likely to sunbathe and use tanning salons (R.S.K., un-
published data, 2005).

Although varying cultural values may account for some
differences in health care use, public education regard-
ing melanoma risk in black and Hispanic persons and de-
ivery of skin cancer screening and examinations repres-
ent the main potential areas of intervention to improve
the stage at diagnosis of melanoma in these popula-
tions. We hope that earlier diagnosis of melanoma at a
more favorable stage will ultimately improve melanoma
survival rate in minority populations.

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