PhD,[d,e] Harold W. Higgins, MD,[d] Cerrene N. Giordano, MD,[d] Stacy McMurray, MD,[d] Aimee Krausz, MD,[d] Leora Aizman, BS,[f] Tess M. Lukowiak, BS,[g] and Christopher J. Miller, MD[d]

From the Department of Dermatology, Icahn School of Medicine at Mt. Sinai, New York, New York[a]; Cooper Medical School of Rowan University, Camden, New Jersey[b]; Section of Dermatology, University of Chicago, Chicago, Illinois[c]; the Department of Dermatology, University of Pennsylvania, Philadelphia, Pennsylvania[d]; the Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, Philadelphia, Pennsylvania[e]; George Washington University School of Medicine and Health Sciences, Washington, DC[f]; and Drexel College of Medicine, Philadelphia, Pennsylvania.[g]

Dr Bhatt and Ms Perz contributed equally as co-first authors.

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Correspondence to: Christopher J. Miller, MD, Penn Dermatology Oncology Center, 3400 Civic Center Blvd, Philadelphia, PA 19104

E-mail: christopher.miller2@pennmedicine.upenn.edu

Conflicts of interest

None disclosed.

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Risk factors for thick melanoma among veterans: A cross-sectional study

To the Editor: Breslow thickness is the most important melanoma prognostic factor, with mortality increasing by 1.6-fold for every millimeter increase.[1] Prior research suggests that dermatology visits at 6 months[2] and 24 months[3] before diagnosis are associated with thinner melanomas, but the optimal interval remains unknown. We examined risk factors for thick melanoma (≥2 mm) versus thin (<2 mm) at diagnosis, including timing of prior dermatology visits.

In this cross-sectional study, we retrospectively identified initial invasive melanoma diagnoses (1 per subject) documented in the VA Central Cancer Registry, capturing approximately 90% of VA cancer cases[4] from January 2009 to December 2017, when prevalence stabilized. We examined thickness and several covariates, including last dermatology visit (Table I). We examined typical screening skin examination intervals, including visits 6 or 12 months before diagnosis (±2 weeks). We also examined visits outside of these points that were within 2 years and 2 to 5 years of diagnosis. Cases with missing or inaccurate thickness based on tumor stage were excluded. We conducted univariate and multivariable logistic regression to determine odds of thick melanoma (≥2 mm), using R version 3.5.3. The VA Boston Healthcare System institutional review board approved this study.

We identified 19,504 melanoma cases. After excluding 7286 cases (37.4%) for missing thickness and 105 (0.5%) for incongruent thickness, 12,113 cases (62.1%) remained. Most patients were men and 94% were regular VA users,[5] with no difference between those with thin and thick melanomas. Veterans with thick melanoma were more likely to be older, be minority race/ethnicity, be North Atlantic/Pacific residents, have extratruncal locations, and be less likely to have dermatology visits less than or equal to 2 years after diagnosis compared with those with thin melanoma (Table I). On multivariable analysis, older age, Black race, Hispanic ethnicity, North Atlantic/Pacific residency, and extratruncal locations were associated with increased odds of thick melanoma (Table II). Dermatology visits 6 months (odds ratio [OR] 0.31; 95% confidence interval [CI] 0.24-0.39) or 12 months (OR 0.40; 95% CI 0.31-0.52) before diagnosis were associated with similarly reduced odds of thick melanoma. Dermatology visits at nonscreening intervals were

Table I. Patient characteristics for thick (≥2 mm) and thin (<2 mm) melanomas

Characteristic	Overall	Thin	Thick	*P* value*
n	12,113	9369	2744	
Age,† median (IQR), y	68.25 (62.74–77.22)	67.93 (62.51–76.41)	69.50 (63.57–79.65)	**<.001**
Sex (%)				**.02**
Men	11,730 (96.8)	9053 (96.6)	2677 (97.6)	
Women	383 (3.2)	316 (3.4)	67 (2.4)	
Race (%)				**<.001**
White	11,245 (92.8)	8740 (93.3)	2505 (91.3)	
Black or African American	83 (0.7)	37 (0.4)	46 (1.7)	
Native Hawaiian or other Pacific Islander	52 (0.4)	37 (0.4)	15 (0.5)	
American Indian or Alaska Native	36 (0.3)	27 (0.3)	9 (0.3)	
Asian	11 (0.1)	7 (0.1)	4 (0.1)	
Unknown	686 (5.7)	521 (5.6)	165 (6.0)	
Ethnicity (%)				**.008**
Not Hispanic or Latino	11,485 (94.8)	8900 (95.0)	2585 (94.2)	
Hispanic or Latino	133 (1.1)	88 (0.9)	45 (1.6)	
Unknown	495 (4.1)	381 (4.1)	114 (4.2)	
Rurality (%)				.47
Urban	7018 (57.9)	5417 (57.8)	1601 (58.3)	
Rural	4809 (39.7)	3738 (39.9)	1071 (39.0)	
Highly rural	210 (1.7)	154 (1.6)	56 (2.0)	
Unknown	76 (0.6)	60 (0.6)	16 (0.6)	
Region (%)				**.02**
Midwest	2879 (23.8)	2270 (24.2)	609 (22.2)	
North Atlantic	2179 (18.0)	1657 (17.7)	522 (19.0)	
Southeast	2231 (18.4)	1751 (18.7)	480 (17.5)	
Continental	2129 (17.6)	1651 (17.6)	478 (17.4)	
Pacific	2695 (22.2)	2040 (21.8)	655 (23.9)	
Dermatology visit before melanoma diagnosis				**<.001**
None	5370 (44.3)	3908 (41.7)	1462 (53.3)	
6 mo	698 (5.8)	613 (6.5)	85 (3.1)	
12 mo‡	508 (4.2)	433 (4.6)	75 (2.7)	
≤2 y§	4601 (38.0)	3716 (39.7)	885 (32.3)	
>2 but ≤5 y	936 (7.7)	699 (7.5)	237 (8.6)	
Tumor location (%)				**<.001**
Trunk	5242 (43.3)	4328 (46.2)	914 (33.3)	
Head/neck	3228 (26.6)	2386 (25.5)	842 (30.7)	
Lower extremities	224 (1.8)	131 (1.4)	93 (3.4)	
Upper extremities	393 (3.2)	282 (3.0)	111 (4.0)	
Unknown	3026 (25.0)	2242 (23.9)	784 (28.6)	

Bold text denotes significance ($P < .05$).
IQR, Interquartile range.
**P* values were calculated with χ^2 tests except age, which was calculated with 1-way analysis of variance.
†Age is modeled as a continuous variable, with the range as 19 to 100 years.
‡Excludes patients with a visit 6 months before melanoma diagnosis.
§Excludes patients with visits at 6 or 12 months before melanoma diagnosis.

also associated with reduced odds, with greater benefit within 2 years of diagnosis (OR 0.59; 95% CI 0.53-0.65) than at greater than 2 years (OR 0.82; 95% CI 0.70-0.97) before diagnosis. Adjusting for history of nonmelanoma skin cancer did not change our findings.

We found that dermatology visits at typical screening intervals, 6 or 12 months before diagnosis, were associated with similarly reduced odds of thick melanoma, a predictor of melanoma mortality. Although causality is unknown, this information can potentially guide melanoma screening frequency. Dermatology visits at nonscreening intervals were associated with reduced odds of thick melanoma to a lesser degree and may reflect intrinsic differences in patients or providers. In addition, racial/ethnic disparities exist with respect to melanoma thickness among veterans.

Table II. Univariate and multivariable odds ratios for thick melanoma

Characteristic	Univariate OR (95% CI)	Multivariate OR (95% CI)
Age, y	**1.02 (1.01-1.02)**	**1.02 (1.01-1.02)**
Sex		
Men	1 [Reference]	1 [Reference]
Women	**0.72 (0.55-0.94)**	0.76 (0.58-1.01)
Race		
White	1 [Reference]	1 [Reference]
Black or African American	**4.34 (2.81-6.70)**	**3.18 (2.02-5.00)**
Native Hawaiian or other Pacific Islander	1.41 (0.78-2.58)	1.61 (0.87-2.99)
American Indian or Alaska Native	1.16 (0.55-2.48)	1.06 (0.49-2.29)
Asian	1.99 (0.58-6.82)	1.53 (0.41-5.68)
Unknown	1.10 (0.92-1.32)	1.02 (0.82-1.26)
Ethnicity		
Not Hispanic or Latino	1 [Reference]	1 [Reference]
Hispanic or Latino	**1.76 (1.23-2.53)**	**1.62 (1.11-2.36)**
Unknown	1.03 (0.83-1.28)	0.96 (0.74-1.24)
Region		
Midwest	1 [Reference]	1 [Reference]
North Atlantic	**1.17 (1.03-1.34)**	**1.26 (1.09-1.44)**
Southeast	1.02 (0.89-1.17)	1.14 (0.99-1.31)
Continental	1.08 (0.94-1.24)	1.04 (0.91-1.20)
Pacific	**1.20 (1.06-1.36)**	**1.25 (1.1-1.43)**
Rurality		
Urban	1 [Reference]	1 [Reference]
Rural	0.97 (0.89-1.06)	0.99 (0.90-1.08)
Highly rural	1.23 (0.90-1.68)	1.15 (0.83-1.57)
Unknown	0.90 (0.52-1.57)	0.81 (0.46-1.43)
Dermatology visit before melanoma diagnosis		
None	1 [Reference]	1 [Reference]
6 mo	**0.37 (0.29-0.47)**	**0.31 (0.24-0.39)**
12 mo*	**0.46 (0.36-0.60)**	**0.40 (0.31-0.52)**
≤2 y†	**0.64 (0.58-0.70)**	**0.59 (0.53-0.65)**
>2 but ≤5 y	0.91 (0.77-1.06)	**0.82 (0.70-0.97)**
Tumor location		
Trunk	1 [Reference]	1 [Reference]
Head/neck	**1.67 (1.50-1.86)**	**1.62 (1.46-1.81)**
Lower extremities	**1.86 (1.48-2.35)**	**1.86 (1.47-2.35)**
Upper extremities	**3.36 (2.55-4.43)**	**3.25 (2.44-4.33)**
Unknown	**1.66 (1.49-1.85)**	**1.62 (1.45-1.81)**

Bold text denotes significance ($P < .05$).
CI, Confidence interval; *OR*, odds ratio.
*Excludes patients with a visit 6 months before melanoma diagnosis.
†Excludes patients with visits at 6 or 12 months before melanoma diagnosis.

Our findings are limited to veterans, who are primarily men, and may not apply to other populations. Because of the nature of the VA Central Cancer Registry, we could not confirm whether full-body skin examinations were performed, and used typical screening intervals as surrogates for screening. Further research is needed to validate these findings and examine causality.

Rebecca I. Hartman, MD, MPH,[a,b] Jennifer La, PhD,[c] Michael S. Chang, BA,[a,d] David Cheng, PhD,[c] Nhan Do, MD,[c,e] Mary Brophy, MD,[c,e] and Nathanael R. Fillmore, PhD[c]

From the Department of Dermatology, Brigham and Women's Hospital, Boston, Massachusetts[a]; Department of Dermatology, VA Integrated Service Network 1 (VISN-1), Jamaica Plain, Massachusetts[b]; Massachusetts Veterans Epidemiology Research and Information Center, VA Boston Healthcare System[c]; Harvard Medical School, Boston, Massachusetts[d]; and Department of

Medicine, Boston University School of Medicine, Massachusetts.[e]

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Correspondence to: Rebecca I. Hartman, MD, MPH, Harvard Medical School, BWH Department of Dermatology, 221 Longwood Ave, Boston, MA 02215

E-mail: rhartman@bwh.harvard.edu

Conflicts of interest

None disclosed.

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Chronic hydroxychloroquine therapy and COVID-19 outcomes: A retrospective case-control analysis

To the Editor: Hydroxychloroquine (HCQ) has failed to show significant therapeutic benefit for patients with coronavirus disease-2019 (COVID-19) in recent studies, although interest in this medication's potential pre- and postprophylactic efficacy remains, with 1 retrospective study showing reduced COVID-19 infection among patients taking chronic HCQ.[1,2] In this study, we sought to evaluate COVID-19 clinical outcomes in patients taking chronic HCQ for an underlying condition as well as in a matched cohort not taking HCQ at time of COVID-19 diagnosis.

Table I. Hydroxychloroquine indication, dosage, and duration at time of COVID-19 diagnosis

HCQ indication, dosage, and duration (N = 50)	n (%)
HCQ indication	
Systemic lupus erythematosus	17 (34.0)
Rheumatoid arthritis	11 (22.0)
Connective tissue disease overlap syndromes	9 (18.0)
Sjögren syndrome	6 (12.0)
Mixed connective tissue disease	2 (4.0)
Undifferentiated connective tissue disease	1 (2.0)
Erythema nodosum during pregnancy	1 (2.0)
Carcinoid	1 (2.0)
Myalgic encephalomyelitis/ chronic fatigue syndrome	1 (2.0)
Acquired hypogammaglobulinemia	1 (2.0)
HCQ dosage	
200 mg HCQ daily	13 (36.0)
200 mg HCQ 2 times daily (400 mg total)	36 (72.0)
200 mg HCQ 3 times daily (600 mg total)	1 (2.0)
Mean duration of HCQ therapy before COVID-19 diagnosis (IQR)	28 (14.25-44.25) months

COVID-19, Coronavirus disease-2019; *HCQ*, hydroxychloroquine; *IQR*, interquartile range.

We identified all patients with severe acute respiratory syndrome coronavirus 2 seen at New York University from March to April 2020 using *International Classification of Diseases, 10th revision* codes and included patients taking HCQ for ≥6 weeks before their COVID-19 diagnosis. Control subjects were randomly selected from the remaining severe acute respiratory syndrome coronavirus 2–positive patients with automated matching for age, gender, and immunosuppressive medication using SPSS software (SPSS Inc, Chicago, IL). Baseline clinical characteristics and outcomes were compared using Pearson χ^2, independent sample *t* test, and Mann–Whitney tests using 2-tailed significance (significance set as $P < .05$).

We identified 50 patients taking chronic HCQ for ≥6 weeks before their COVID-19 diagnosis and 103 matched control subjects who were not taking HCQ at the time of their COVID-19 diagnosis (Table I). There was no significant difference in age, sex, overall use of iatrogenic immunosuppressive medications, or COVID-19 risk factors between the groups (Table II). However, in the control group, there was a significantly higher rate of organ transplantation (2.0% vs 26.2%, $P < .001$), and consequently a higher rate of chronic tacrolimus