**Table II.** Model to identify TBSE encounters based on E&M code and relevant diagnoses

| Category | Yes TBSE | No TBSE | Total | |
|---|---|---|---|---|
| Relevant diagnosis + high E&M code | 175 | 42 | 217 | PPV 81% |
| No relevant diagnosis + high E&M code | 28 | 59 | 87 | NPV 68% |
| Total | 203 | 101 | | |
| | Sensitivity 86% | Specificity 58% | | |

*E&M*, Evaluation and management; *NPV*, negative predictive value; *PPV*, positive predictive value; *TBSE*, total-body skin examination.

relevant diagnoses, high evaluation and management codes (ie, 99203-99205, 99213-99215), and cryotherapy and biopsies. The c-statistic was calculated to determine the percentage of times that the algorithm correctly discriminated whether a TBSE was performed. The best model included high evaluation and management codes and at least 1 relevant diagnosis (sensitivity 86%, specificity 58%, PPV 81%, NPV 68%, c-statistic 0.73) (Table II). Of note, the sensitivity, specificity, PPV, and NPV of codes V76.53 and Z12.83 were 38%, 86%, 84%, and 41%, respectively, indicating the codes accurately capture TBSEs but are highly underutilized.

To validate the algorithm, the Research Patient Data Registry was queried for dermatology visits during January 1, 2015-December 31, 2015, at Brigham and Women's Hospital and Massachusetts General Hospital with high evaluation and management codes, a relevant diagnosis, and Medicare insurance. Five hundred different visits were randomly selected and reviewed for documented TBSE; 82% had a TBSE (ie, PPV), similar to the original model (81%). The c-statistic of 0.73 indicated a good model, but not a strong model. Analyses were conducted by using SAS version 9.4 (SAS Institute, Cary, NC) and STATA version 14.2 (StataCorp, College Station, TX). Reported *P* values were 2-sided with type I error ($\alpha$) of $<.05$ considered to be statistically significant.

The study highlights the coding variation for skin cancer screening visits, which limits cost estimates. Without this data, cost-effectiveness studies cannot be performed. Increased documentation of skin cancer screening visits using code Z12.83 could improve identification of screening visits to better inform the US Preventive Services Task Force.

*Kylee J. B. Kus, BS,*[a] *Pritesh S. Karia, MPH,*[b] *Chrysalyne D. Schmults, MD, MSCE,*[c] *and Emily S. Ruiz, MD, MPH*[c]

*From the Oakland University William Beaumont School of Medicine, Rochester, Michigan*[a]*; Department of Epidemiology, Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland*[b]*; and Department of Dermatology, Brigham and Women's Hospital, Harvard Medical School, Boston, Massachusetts.*[c]

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*Reprint requests: Emily S. Ruiz, MD, MPH, Department of Dermatology, Brigham and Women's Hospital, 1153 Centre St, Ste 4J, Boston, MA 02130*

*E-mail: esruiz@bwh.harvard.edu*

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## Nonmelanoma skin cancers are more likely to be untreated in elderly patients

*To the Editor:* Incidence rates of nonmelanoma skin cancers (NMSCs) have continued to rise, particularly among elderly.[1,2] Prior literature has shown that elderly and nonelderly patients with NMSC tend to be treated similarly.[3] Given the indolent nature of

these tumors, consideration of *no treatment* has been recommended. Our objective was to determine if we treat elderly and nonelderly patients with the same modalities at the same rates at our academic medical center and to identify underlying patient characteristics differentiating treated and untreated elderly patients.

Our analysis included biopsy-proven NMSCs among adults seen in the dermatology department in 2017 and 2018. Cases involving a patient with both treated and untreated skin cancers were excluded. Patients who did not receive treatment within 12 months of biopsy were defined as *untreated*. Patients age 85 years or older were considered *elderly*.[1] Data were analyzed via Fisher's exact test and logistic regression in Stata, version 15 (StataCorp, College Station, TX).

Of 1048 biopsy-proven skin cancers and 515 unique patients, 927 met inclusion criteria. Patient characteristics are summarized by age category in Table I. Mohs micrographic surgery was the most common treatment overall. Rates of untreated skin cancer cases differed significantly between elderly and nonelderly patients (13.0% vs 4.2%, $\chi^2 < .0001$). When categorizing age by decade, those age 85 years or older had significantly higher univariate odds of being untreated (odds ratio [OR], 3.62; $P = .018$). Overall, the common documented reasons for not having treatment included loss to follow up (35%), negative biopsy margin results (23%), refusal due to age or comorbidities (21%), and management at outside hospital (10%); no significant differences were observed between age categories.

Characteristics of treated versus untreated elderly patients are summarized in Table II. Among elderly patients, women (OR, 7.43; $P = .012$) were more likely to be untreated, and the 2 elderly nonwhite patients were both untreated ($P < .0001$). Having 4 or more comorbidities (OR, 3.91; $P = .031$) also conferred higher likelihood of not having treatment. Specifically, *no treatment* was more likely in those with neurocognitive impairment (OR, 3.91; $P = .036$) and those with impairment in activities of daily living (OR, 10.0; $P < .0001$), and all patients with hemiplegia were untreated ($P < .0001$). Conversely, patients with a prior skin cancer were more likely to be treated (OR, 0.10; $P = .001$). ADL impairment (OR, 48.6; $P = .007$)

**Table I.** Demographic and diagnostic characteristics of all patients with biopsy-proven nonmelanoma skin cancers

| Characteristics | <85 years (n = 827), n (%) | ≥85 years (n = 100), n (%) | *P* value |
|---|---|---|---|
| Male sex | 497 (60.1) | 52 (52.0) | .12 |
| Type of NMSC | | | |
| BCC | 509 (61.5) | 46 (46.0) | .003* |
| SCC | 181 (21.9) | 38 (38.0) | <.0001* |
| SCCIS | 137 (16.6) | 16 (16.0) | .89 |
| Zone[†] | | | |
| 1 | 208 (25.2) | 40 (40.0) | .002* |
| 2 | 257 (31.1) | 30 (30.0) | .83 |
| 3 | 362 (43.8) | 30 (30.0) | .008* |
| Treatment type[‡] | | | |
| No treatment | 35 (4.2) | 13 (13.0) | <.0001* |
| Cryotherapy | 3 (0.4) | 0 (0.0) | — |
| ED&C | 85 (10.3) | 9 (9.0) | .69 |
| MMS | 443 (53.6) | 54 (54.0) | .93 |
| Excision | 177 (21.4) | 14 (14.0) | .084 |
| Topical therapy | 84 (10.2) | 10 (10.0) | .96 |
| Time to treatment in days, mean (SD)[§] | 74.3 (67.0) | 79.1 (66.5) | .53 |

*BCC,* Basal cell carcinoma; *ED&C,* electrodessication and curettage; *MMS,* Mohs micrographic Surgery; *NMSC,* nonmelanoma skin cancer; *SCC,* squamous cell carcinoma; *SCCIS,* squamous cell carcinoma in situ; *SD,* standard deviation.

*Denotes significance at $\alpha = 0.05$ level.

[†]National Comprehensive Cancer Network (NCCN) Guidelines, version 2.2013, of basal and squamous cell skin cancers:

- Zone 1: "mask areas" of face (central face, eyelids, eyebrows, periorbital, nose, lips (cutaneous and vermillion), chin, mandible, preauricular and postauricular skin (sulci, temple, ear), genitalia, hands, and feet.
- Zone 2: cheeks, forehead, scalp, neck, and pretibial area.
- Zone 3: trunk and extremities excluding pretibial area, hands, feet, nail units, and ankles. (NCCN guidelines for basal and squamous cell carcinoma. Available at: http://www.nccn.org/professionals/physician_gls/f_guidelines.asp. Accessed June 16, 2019.)

[‡]No patients received radiation therapy.

[§]From date of biopsy.

**Table II.** Clinical characteristics of elderly (age 85 years or older) patients with nonmelanoma skin cancer, by treatment status*

| Factor | Treated (n = 87), n (%) | Untreated (n = 13), n (%) | *P* value† |
|---|---|---|---|
| Female sex | 37 (43) | 11 (85) | .012 |
| Race | | | |
| White | 87 (100) | 11 (85) | <.0001 |
| Nonwhite | 0 (0) | 2 (15) | |
| History of skin cancer | 65 (76) | 3 (23) | .001 |
| Neurocognitive impairment | 12 (14) | 5 (38) | .031 |
| ADL impairment | 12 (14) | 8 (62) | <.0001 |
| Hemiplegia | 0 (0) | 2 (15) | <.0001 |
| 4 or more comorbidities | 12 (14) | 5 (38) | .036 |

*ADL*, Activities of daily living.
*Significance at a = 0.05 level.
†Nonsignificant differences were observed in age at biopsy, family history of skin cancer, histologic diagnosis, location, diabetes, liver or kidney disease, other cancer, heart disease, stroke, inflammatory bowel disease, organ transplant, chronic obstructive pulmonary disease, peripheral vascular disease, peptic ulcer disease, tobacco use, and alcohol use.

and prior skin cancer (OR, 0.03; $P = .003$) remained significant after multivariate analysis.

In contrast to prior studies, we found that *no treatment* rates between elderly and nonelderly patients with biopsy-proven NMSCs were significantly different in our practice. We also observed that in those treated, the same common treatments were used at the same rates.[3,4] To our knowledge, this is the first retrospective study comparing clinical characteristics between treated and untreated elderly patients with NMSC. Univariate characteristics associated with untreated NMSC in the elderly at our institution include female sex, no prior skin cancer, high comorbidity burden, and neurologic or functional impairments. Limitations include our single-center, retrospective design; small sample size and follow-up; and absence of data on nonbiopsied suspected skin cancers. Additionally, subjective elements of treatment decision making may add selection bias; potential influences such as insurance status and distance from hospital were also not considered.

*Pallavi Basu, MPH,[a,b,c] Ashley Beckles, BS,[c] Martina L. Porter, MD,[c] and Suzanne Olbricht, MD[c]*

*From the Department of Biostatistics, Harvard School of Public Health, Boston, Massachusetts[a]; School of Medicine, University of California—San Diego[b]; and Department of Dermatology, Beth Israel Deaconess Medical Center, Boston, Massachusetts.[c]*

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*Correspondence to: Suzanne Olbricht, MD, 330 Brookline Ave, Boston, MA 02215*

*E-mail: solbrich@bidmc.harvard.edu*

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## Low-dose methotrexate as rescue therapy in patients with hidradenitis suppurativa and pyoderma gangrenosum developing human antichimeric antibodies to infliximab: A retrospective chart review

*To the Editor:* Human antichimeric antibodies (HACAs) to infliximab are neutralizing antibodies that decrease therapeutic efficacy.[1] In nondermatologic contexts, there is evidence for the use of methotrexate (MTX) to prevent development of HACAs.[2] Although infliximab is used in dermatology