

Brief Research Report

Demographic Characteristics and Management of Uninsured Patients with a History of Melanoma

Noura Ayoubi, BS^{1*}; Abu-Sayef Mirza, MD, MPH²; Mohammad Ayoubi, BS [Student]³; Justin Swanson, MPH⁴

¹University of South Florida, Morsani College of Medicine, Tampa, FL 33647, USA

²Department of Internal Medicine, Physician, University of South Florida, Tampa, FL 33647, USA

³University of South Florida, College of Arts and Sciences, Tampa, FL 33647, USA

⁴University of South Florida, College of Public Health, Tampa, FL 33647, USA

*Corresponding author

Noura Ayoubi, BS

University of South Florida, Morsani College of Medicine, 17203 Broadoak Dr., Tampa, FL 33647, USA; Tel: (813) 455-9606; E-mail: nayoubi@health.usf.edu

Article information

Received: April 24th, 2019; Revised: May 17th, 2019; Accepted: May 23rd, 2019; Published: May 30th, 2019

Cite this article

Ayoubi N, Mirza A-S, Ayoubi M, Swanson J. Demographic characteristics and management of uninsured patients with a history of melanoma. *Dermatol Open J.* 2019; 4(1): 15-19. doi: [10.17140/DRMTOJ-4-136](https://doi.org/10.17140/DRMTOJ-4-136)

ABSTRACT

Aims and Objectives

Patients diagnosed with malignant melanoma often undergo regular follow-up care and skin checks to reduce the likelihood of recurrence. Yearly exams are more inconsistent and likely to be missed due to a lack of healthcare access and resources among the uninsured population. This study determined demographic characteristics of uninsured patients with a history of malignant melanoma. Follow-up was assessed in order to improve and ensure the highest quality of long-term care.

Methods

Demographics and chronic disease diagnoses were extracted from 8,857 patients managed at eight free-clinics from the Tampa Bay Area during 2016 and 2017. Patients diagnosed with malignant melanoma were specifically chosen for further chart review. A retrospective analysis of the follow-up care and health outcomes are reported.

Results

A total of 200 of 8,857 reported a history of malignancy; ten patients (5%) were diagnosed with malignant melanoma. The average age of these patients was 52-years-old, 70% (N=7) of whom were female. Initial treatment for 2 patients (20%) was surgical excision. Remaining patients were either observed (N=2) or did not mention treatment to their free clinic provider (N=6). Post-operative follow-up for recurrent lesions varied between patients but a commonly cited reason that prevented proper follow-up with a dermatologist in eight of the ten patients (80%) was financial restraint.

Conclusions

Free-clinics should be cognizant of local dermatologists who provide subsidized services to those in need due to the higher prevalence of melanoma among the uninsured. Patients should also be directed to free clinics immediately after surgery to receive recommended follow-up skin checks. With education, free-clinics can deliver higher quality dermatology management to patients by following recommended standards.

Keywords

Dermatologic care; Free clinic; Malignant melanoma; Uninsured.

Abbreviations

NCCN: National Comprehensive Cancer Network; IRB: Institutional Review Board; AAD: American Academy of Dermatology; ABCDE: Asymmetry, Borders, Color, Diameter, Evolution; RISE: Research, Innovation, and Scholarly Endeavors.

BACKGROUND

Melanoma is an aggressive type of skin cancer that arises from the pigment-producing melanocytes of the epidermis.¹ Un-

like the more common skin cancers, basal cell carcinoma and squamous cell carcinoma, melanoma is much more likely to metastasize to other parts of the body, rendering it malignant.¹ There are many risk factors associated with the development of melanoma,

common ones being ultraviolet radiation exposure, use of tanning beds, fair skin, personal history of any skin cancer, family history of melanoma, and a compromised immune system.^{2,3}

Early detection and treatment are of the most important factors in determining prognosis because they allow for a wider breadth of treatment options, increasing the likelihood that the chosen treatment will be effective.⁴ Once the lesion invades lymph nodes and spreads systemically to other parts of the body, it becomes exceedingly difficult to control.⁵ According to the National Comprehensive Cancer Network (NCCN), most cases of melanoma are first treated with surgical excision.^{5,6} In the case that the melanoma has spread to regional lymph nodes or other body organs, surgical excision is often accompanied by adjuvant treatment.^{5,7} Radiation therapy can be used when tumor cells are limited to regional lymph nodes because it decreases recurrence of disease and subsequent organ metastasis.⁸ Immunotherapy may be used to modify the immune system such that it may gain the ability to fight off tumor cells.⁹ Similar to chemotherapy, targeted therapy can also be used to kill tumor cells, but it relies on specific characteristics of the cells such as gene mutations.^{10,11}

After an initial diagnosis and excision of a melanocytic lesion, it is important for patients to follow-up with monthly self-skin exams and annual physician skin exams.¹² Having a history of melanoma increases the risk of future melanoma occurrence. For this reason, taking necessary precautions such as avoiding excess ultraviolet exposure and performing consistent skin-checks becomes even more important in these patients.¹³ In general, detecting recurrence earlier is more likely to improve treatment outcomes and prognosis.¹³

It is estimated that 1% of cancer diagnoses in the general population are comprised of melanoma.¹⁴ With the number of uninsured patients rising, it is becoming more important to determine the prevalence and health outcomes of this population.¹⁵ The aim of this study is to report on demographics and management of uninsured patients with a history of melanoma. Historically, very little data is collected on the uninsured population, with even less data being used to analyze melanoma in these patients. Given the potential for significant morbidity and mortality in patients with advanced melanoma, we would like to report on incidence as well as propose necessary steps to reduce this overall incidence in uninsured patients.

Yearly exams are more inconsistent and likely to be missed due to a lack of healthcare access and resources among the uninsured population. For this reason, patients need to be increasingly aware of how to properly perform monthly self-skin-exams, in addition to any other steps they can take to reduce the risk of recurrence. Uninsured patients should also be made aware of steps they can take to reduce risk of primary melanoma, similar to how they are educated on avoiding smoking to reduce risk of lung cancer or on maintaining colonoscopy follow-ups to remove polyps, overall reducing risk of colon cancer. Risk of melanoma can be reduced with proper education of patients on how to do so.

METHODS

Data regarding demographics and chronic disease diagnoses were extracted from 8,857 uninsured patients managed at eight free clinics from the Tampa Bay Area during 2016 and 2017. The sample size consisted of patients who were seen for the first time during the given time period of January 1, 2016 to December 31, 2017. Those who had been seen at one of the eight free clinics outside of this window were excluded from the sample.

Data gathered during chart review included demographic characteristics such as gender, age, race, employment status, income and household size. A diagnosis, or lack thereof, of any chronic condition, was also recorded, including any treatment the patient was receiving for it. We also determined social history by gathering smoking status, alcohol use and recreational drug use.

The most common types of cancer were also included in the survey during chart review. Patients diagnosed with malignant melanoma were specifically chosen for further chart review and an analysis of their follow-up care and health outcomes was carried out. This research study was reviewed and approved by the University of South Florida Research Integrity and Compliance Institutional Review Board (IRB) (Approval # 23920). The IRB determined that our study was approved for research involving materials (data, documents, records and specimens) that have been collected or will be collected solely for non-research purposes (such as medical treatment or diagnosis).

RESULTS

A total of 200 of 8,857 patients being managed at a free clinic reported a history of malignancy; ten (5.0%) patients were diagnosed with malignant melanoma. Of the patients diagnosed with malignant melanoma, 70% (N=7) were female and 30% (N=3) were male. The average age of patients was 52, all of whom are still alive. 10% (N=1) patient was Hispanic, 70% (N=7) of patients were not Hispanic, and 20% (N=2) of patients had unspecified ethnicity. In terms of race, 80% of patients (N=8) were white and 20% (N=2) had unspecified race. Employment status was not recorded for 30% (N=3) of patients. Of those with recorded

Table 1. Demographics of Uninsured Patients with a History of Malignant Melanoma

Patient	Gender	Age Range (Years)	Ethnicity	Race	Employment Status
A	Female	30-39	Not Hispanic	White	Unemployed
B	Female	40-49	Not Hispanic	White	Unknown
C	Female	40-49	Hispanic	White	Unemployed
D	Male	50-59	Not Hispanic	White	Unemployed
E	Female	50-59	Not Hispanic	White	Unemployed
F	Female	50-59	Not Hispanic	White	Employed
G	Female	60-69	Unspecified	Unspecified	Unspecified
H	Female	60-69	Not Hispanic	White	Employed
I	Male	60-69	Unspecified	Unspecified	Unspecified
J	Male	60-69	Not Hispanic	White	Unemployed

employment status, 20% (N=2) of total melanoma patients were employed and 50% (N=5) were unemployed. Table 1 displays the demographics of these patients.

Date of initial melanoma diagnosis was not reported in 50% (N=5) of the ten patients. Initial curative treatment for 20% (N=2) of patients was surgical removal of the primary lesion; 20% (N=2) reported observation as opposed to treatment. The remaining 60% (N=6) of patients did not discuss the management of their melanoma with the primary care physician at the free clinic. Additionally, only 30% (N=3) of patients mentioned a history of melanoma screening to the free clinic physician. Table 2 presents the year of diagnosis, management, and prior melanoma screening for these patients.

Table 2. Melanoma Diagnosis Year, Management and Mention of Prior Melanoma Screening in Uninsured Patients with a History of Malignant Melanoma

Patient	Year of Diagnosis	Management	Mention of Prior Melanoma Screening
A	2008	Surgery	Yes
B	Unspecified	Unspecified	No
C	2017	Observation	Yes
D	2016	Unspecified	No
E	Unspecified	Unspecified	No
F	Unspecified	Unspecified	No
G	2016	Unspecified	Yes
H	2016	Surgery	No
I	Unspecified	Unspecified	No
J	Unspecified	Observation	No

Follow-up for recurrent lesions varied between patients but a commonly cited reason that prevented proper follow-up with a dermatologist and treatment in eight of the ten patients (80%) was financial restraint. When patients first presented at a free clinic, a total body skin exam was completed and documented in 40% (N=4) of cases. Despite financial concerns, patients presenting with atypical lesions were referred to a dermatologist or plastic surgeon for a biopsy and subsequent excision of questionable lesions. According to the patient charts, only one patient (10%) managed to pay for excision of several melanocytic nevi, as recommended by the free clinic physician. Remaining patients did not follow through free clinic provider-prescribed referrals. Despite their inability to address potentially malignant melanocytic lesions, patients continued to be seen at their respective free clinic for minor health concerns and pharmaceutical refills.

Table 3 displays tobacco use and alcohol use of uninsured patients with a history of melanoma. Of the ten patients, 40% (N=4) had never smoked tobacco and 10% (N=1) had an unspecified tobacco-use history. 50% (N=5) of patients are active smokers, 80% (N=4) of which had an unspecified pack year history and 20% (N=1) had a 1-10 pack year history. In terms of alcohol use, 50% (N=5) of patients have never had an alcoholic drink and 30% (N=3) had an unspecified alcohol-use history. 20% (N=2) are active alcohol drinkers, with one patient drinking an av-

erage of 1 drink per week and the other patient drinking an average of 2 drinks per week.

Table 3. Alcohol and Tobacco Use of Uninsured Patients with a History of Malignant Melanoma

Patient	Tobacco Use (Pack Years)	Alcohol Use (Drinks Per Week)
A	Active Smoker (1-10)	Current Drinker (2)
B	Active Smoker (Unspecified)	Unspecified
C	Active Smoker (Unspecified)	Never
D	Never	Never
E	Never	Never
F	Never	Never
G	Unspecified	Unspecified
H	Active Smoker (Unspecified)	Current Drinker (1)
I	Never	Unspecified
J	Active Smoker (Unspecified)	Never

DISCUSSION

Retrospective analysis of uninsured patients diagnosed with malignant melanoma revealed a lack of proper follow-up with a dermatologist or primary care physician after excision of primary lesions. Additionally, a few of the patients did not even receive primary treatment for melanoma, opting simply for observation. In general, total body skin exams are performed regularly with the hope of catching and treating melanoma early on, improving the patient's prognosis. Observation is not often the first-line option for patients diagnosed with definitive melanoma. On the other hand, 40% (N=4) of patients mentioned a diagnosis of melanoma to their primary care physician but management was either not discussed or not recorded in the patient's chart. This information is necessary because it changes management approaches and follow-up in melanoma patients. For instance, those who received radiation may be at higher risk for medication-induced side effects. If they did not receive any treatment, it would warrant more in-depth questioning to determine potential advancement of melanoma or widespread metastasis.

Due to an inability to afford indicated biopsies or excisions, uninsured patients may have worse outcomes such as recurrent melanocytic lesions or uncontrollable metastasis leading to terminal disease. Free clinic providers and staff should be cognizant of local dermatologists who provide subsidized services to those in need. Uninsured patients should also be directed to free clinics immediately after primary excisional surgery to receive recommended follow-up skin exams. By establishing with the free clinic early on, patients can be scheduled for regular follow-ups as recommended by the American Academy of Dermatology (AAD). Follow-up timing is dependent on the initial stage of melanoma, with the minimum interval being every six months for the first one or two years. After that, the recommendation is that they have a total body skin exam annually. According to the chart review, only 20% (N=2) of patients presented to their free clinic for skin

cancer follow-up. The remaining patients presented with primary care complaints, with several of them presenting multiple times during the year. This indicates that they did not receive the minimal recommended annual total body skin exam.

Patients should be taught how to perform thorough monthly self-skin-exams using the Asymmetry, Borders, Color, Diameter, Evolution (ABCDE) method.¹⁶ Proper inspection and early detection have been proven to be key in determining the prognosis of patients with malignant melanoma. Thus, keeping patients educated will be more likely to improve health outcomes by catching melanocytic recurrences before they are able to metastasize. In addition, they should be extensively taught about the many steps they can take to avoid unnecessary sun exposure and ultraviolet radiation. Proper awareness and education can then allow for the delivery of overall better healthcare to patients with a higher risk of being diagnosed with recurrent malignant melanoma.

In our study, the percentage of uninsured patients with a history of melanoma was approximately 5% of total malignancies, much higher than the 1% prevalence of melanoma in the general population. This leads one to question whether or not more uninsured patients are diagnosed with melanoma or if a higher percentage of them seek free clinic healthcare. If more uninsured patients are diagnosed with melanoma, it further supports the need for increased education on melanoma-prevention strategies. This would be especially necessary for patients with a history of melanoma. The goal would be to reduce the risk of recurrence in those with a previous diagnosis. In order to determine an accurate relationship between melanoma prevalence and a lack of insurance, more data needs to be collected and analyzed. For this reason, it becomes imperative that research be done on the uninsured population, despite the fact that they are not a well-tracked part of the healthcare system.

LIMITATIONS OF THE STUDY

All of the data was collected from free clinics in Tampa, Florida, USA. This limits the reliability of the data because skin cancer is more prevalent in this “Sunshine State” of the United States due to increased sun exposure, which is an important risk factor for the development of melanoma. It is questionable whether or not these statistics can be applied to areas where sun exposure is not as big a factor. Another limitation of this study is unrecorded data. This includes race, employment and household status, all of which were not recorded for a subset of patients with melanoma. The sample size is also a limiting factor in this study; only two years of data were recorded and analyzed in this paper. The current goal is to collect data from the following year such that future analyses on the prevalence of malignant melanoma in the uninsured population can be done on larger sample sizes.

Through the education of healthcare providers, free clinics can deliver higher quality dermatology management to patients by following recommended standards to reduce the risk of recurrence. This study indicates that the prevalence of melanoma in the uninsured population is significantly higher than that of the

general population, further supporting the importance of educating patients on melanoma risk factors. Risk factor prevention can help reduce the incidence of melanoma in this patient population. Educating those with a history of melanoma on skin cancer monitoring can aid in the diagnosis of a recurrence early on, if it occurs.

It is our hope that a reduction in melanoma among the uninsured will reduce the healthcare burden of cancer morbidity and mortality, especially once cancer has metastasized. This data will be presented to free clinic providers, along with skin cancer prevention strategies they can discuss with their patients. Additionally, we will be providing them with the recommended AAD total body skin exam follow-up timeline in order to increase the likelihood that these patients get the proper long-term management.

CONCLUSION

Free-clinics should be cognizant of local dermatologists who provide subsidized services to those in need due to the higher prevalence of melanoma among the uninsured. Patients should also be directed to free clinics immediately after surgery to receive recommended follow-up skin checks. With education, free-clinics can deliver higher quality dermatology management to patients by following recommended standards.

FUNDING

This research was supported in part by the University of South Florida Morsani College Of Medicine Office of Scholarly Concentration Program and the Research, Innovation, and Scholarly Endeavors (RISE) Program.

CONFLICTS OF INTEREST

The authors declare that they have no conflicts of interest.

REFERENCES

1. American Cancer Society. What Is Melanoma Skin Cancer? Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/about/what-is-melanoma.html>. Accessed June 5, 2018.
2. Melanoma Research Foundation. Am I at Risk for Melanoma? Web site. <https://www.melanoma.org/understand-melanoma/preventing-melanoma/melanoma-risk-factors>. Accessed June 5, 2018.
3. American Cancer Society. Risk Factors for Melanoma Skin Cancer. Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/causes-risks-prevention/risk-factors.html>. Accessed June 5, 2018.
4. Melanoma Research Foundation. Catch Melanoma Early – It May Change Your Life. Web site. <https://www.melanoma.org/understand-melanoma/preventing-melanoma/detecting-melanoma-early>. Accessed June 5, 2018.

5. American Cancer Society. Treatment of Melanoma Skin Cancer by Stage. Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/treating/by-stage.html>. Accessed June 5, 2018.
6. National Comprehensive Cancer Network. Melanoma. Web site. <https://www.nccn.org/patients/guidelines/melanoma/files/assets/common/downloads/files/melanoma.pdf>. Accessed June 5, 2018.
7. Medline Plus. Melanoma. Web site. <https://medlineplus.gov/melanoma.html>. Accessed June 5, 2018.
8. American Cancer Society. Radiation Therapy for Melanoma Skin Cancer. Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/treating/radiation-therapy.html>. Accessed June 5, 2018.
9. American Cancer Society. Immunotherapy for Melanoma Skin Cancer. Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/treating/immunotherapy.html#references>. Accessed June 5, 2018.
10. Berman B, Villa AM. Immune response modulators in the treatment of skin cancer. In: Rigel DS, Friedman RJ, Dzubow LM, Reintgen DS, Bystryń JC, Marks R, eds. *Cancer of the Skin*. Philadelphia, Pennsylvania, USA: Elsevier Saunders; 2005: 499-513.
11. Curtin JA, Fridlyand J, Kageshita T, et al. Distinct sets of genetic alterations in melanoma. *New Engl J Med.* 2005; 353(20): 2135-2147. doi: 10.1056/NEJMoa050092
12. Skin Cancer Foundation. Step by Step Self Examination. Web site. <https://www.skincancer.org/skin-cancer-information/early-detection/step-by-step-self-examination>. Accessed June 5, 2018.
13. American Cancer Society. Living as a Melanoma Skin Cancer Survivor. Web site. <https://www.cancer.org/cancer/melanoma-skin-cancer/after-treatment/follow-up.html>. Accessed June 5, 2018.
14. American Cancer Society. Cancer Facts & Figures 2018. Atlanta, GA, USA: <https://www.cancer.org/content/dam/cancer-org/research/cancer-facts-and-statistics/annual-cancer-facts-and-figures/2018/cancer-facts-and-figures-2018.pdf>. Accessed June 5, 2018.
15. Bump P. “3.2 million more people were uninsured at the end of the 2017 than at the end of 2016. Web site. https://www.washingtonpost.com/news/politics/wp/2018/01/16/3-2-million-more-people-were-uninsured-at-the-end-of-2017-than-at-the-end-of-2016/?noredirect=on&utm_term=.d4eba3df11e5. Accessed June 5, 2018.
16. Melanoma Research Foundation. The ABCDEs of Melanoma. Web site. <https://www.melanoma.org/understand-melanoma/diagnosing-melanoma/detection-screening/abcde-melanoma>. Accessed June 5, 2018.