

Epidemiology of Malignant Melanoma over a Thirty-two Year Period (1981-2013) in Southern Iran

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Abstract

Background: Malignant melanoma, one of the most deadly skin cancers, is a skin tumor that arises from the epidermal melanocytes. The aim of this study is to evaluate the demographic and clinical data of malignant melanoma patients in a referral dermatology center in the south of Iran.

Methods: In this retrospective study, we have reviewed files of 116 patients diagnosed with malignant melanoma at hospitals affiliated with Shiraz University of Medical Sciences, Shiraz, Iran from March 1981 to March 2013.

Results: There was a total 116 malignant melanoma patients (79 male and 37 female) with the mean age of 54.7 (SD=13.9) years old for men and 51.7 (SD=12.4) years old for women. The male to female ratio of malignant melanoma was approximately two, as was the male to female mortality ratio. The most common clinical form was acral lentiginous melanoma. We have identified the most common site to be the sole of the foot. Malignant melanoma mostly presented as a mass and it was most common in farmers.

Conclusion: The national health system should improve the quality and quantity of cancer registry offices so that better and more complete data can be collected for further research and possible implementation of preventive measures with respect to this cancer.

Keywords: Epidemiology, Skin, Melanoma, Iran

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Introduction

As one of the most lethal skin cancers which originates from epidermal melanocytes, the incidence of malignant melanoma (MM) has considerably increased since the mid-

1950s, especially in the most developed countries.¹ Melanoma has a higher incidence in lighter skinned individuals.² While progression can be prevented by detection during the early-stages of this disease, the 5-

year survival rate after onset of distant metastases is less than 5%.³ Ultraviolet (UV) radiation is an established risk factor for melanoma which is mostly dependent on patterns of sun exposure.⁴ Compared to Europe and America, the melanoma incidence is much lower in the Middle East. However, reports on the epidemiology of MM from this region, especially Iran, are rare.⁵ Therefore, in this study, we have aimed to evaluate the demographic and clinical data of MM patients from a referral Dermatology Center in Southern Iran.

Materials and Methods

We conducted this retrospective study in hospitals affiliated with Shiraz University of Medical Sciences, Shiraz, Iran from March 1981 to March 2013. We reviewed files of 116 patients diagnosed with MM for demographic information, clinical presentation, and disease outcome. The clinical diagnosis of cutaneous melanoma was carried out according to the American Joint Committee on Cancer (AJCC) criteria which was modified in 1992. The Ethics Committee of Shiraz University of Medical Sciences approved this study. Descriptive statistics and frequencies were analyzed using SPSS software (version 15).

Results

There were 116 MM patients (79 males and 37 females) with a mean age of 54.7 (SD=13.9) years for males and 51.7 (SD=12.4) years for females. The male to female ratio of MM frequency was approximately two. The male to female mortality ratio was also approximately two (Table 1).

The clinical presentation of MM patients included: a mass in 70 (60%), ulcer in 39 (33.6%), nodule in 5 (4.3%), pain in 4 (3.4%), and cyanosis in 14 (1.2%) patients. Occupations for the patients included: 39 (33.6%) farmers, 32 (27.5%) housekeepers, 16 (13.7%) construction workers, and 13 (11.2%) drivers. Other less reported occupations included 3 (3.4%) ranchers, 3 (3.4%) students, 3 (3.4%) clerks, 2 (1.7%) sailors, and 2 (1.7%) bakers. The sole (29.8%), heel (10.7%), and cheek (7.1%) were the most common primary

Table 1. Demographic data of patients with malignant melanoma (MM) from 1981 to 2013 including gender, age and mortality.*

| Variable | Male | Female |
|------------------|----------|----------|
| Number | 79 (68%) | 37 (32%) |
| Mean age (years) | 54.7 | 51.7 |
| Mortality* | Alive | 60 |
| | Deceased | 17 |
| | | 28 |
| | | 9 |

*Mortality data of two males is unavailable.

sites of MM. Acral lentiginous melanoma (ALM) was the most common type (44.8%) followed by nodular melanoma (17.2%). Other pathological presentations included MM with no primary site (12%), MM based on a congenital nevus (6.8%), mucosal melanoma (6%), superficial spreading melanoma (2.5%), and MM based on dysplastic nevi (0.86 %) as seen in Table 2. Among all cases, 18 patients had a history of smoking, 5 experienced traumatic episodes, 2 had concomitant cancer, and 1 female was pregnant. The other patients reported no probable risk factors. With respect to disease grade, 28.6% had microinvasion (stage I), 8.3% had local invasion (stage II), 45.2% had regional metastasis (stage III), and 17.9% suffered from distant metastasis (stage IV). Despite the absence of lymph node involvement in 37% of the patients, the inguinal area was involved in 45.2%, axillary in 10.6%, cervical in 3.6%, and supraclavicular in 3.6% of the patients. The mortality rate was 25.3% in male patients (17 of 67 cases) and 24.3% in female patients (9 of 37 cases). There was no survival status recorded for two male patients (Table 1).

Discussion

The male to female ratio of MM frequency in our study was nearly two, as was the male to female mortality ratio. Several studies have demonstrated that female melanoma patients generally exhibit significantly lower frequency and longer survival rates than male patients. This difference may be better clarified by noting that localized melanomas in women have a lower propensity to metastasize. Thus, *in situ* and local stages are more common in women, while men usually present with regional and distant disease.^{1,6,7} In Iran, and mostly in rural areas

Table 2. Frequency of clinical types of melanoma.

| Clinical type | Frequency |
|---|------------|
| Acral lentiginous melanoma (ALM) | 52 (44.8%) |
| Nodular melanoma | 20 (17.2%) |
| Malignant melanoma (MM) with no primary site | 14 (12%) |
| MM based on a congenital nevus | 8 (6.8%) |
| Mucosal melanoma | 7 (6%) |
| Superficial spreading melanoma | 3 (2.5%) |
| MM based on dysplastic nevi | 1 (0.86%) |

where it is not very common to protect oneself against UV, direct exposure to bright sunlight is the leading predisposing cause for MM. We have noted that MM occurred more frequently among farmers, a predominantly male group in this region at more risk for exposure to sunlight and UV.

A study by Yaghoobi et al. in Ahwaz, Iran reported that ALM was the most common type.⁸ This finding was compatible with our study in which ALM was the most common clinical presentation. Acral lentiginous melanoma is most common in black people as well as populations from the Far East.⁹ In Iran, this is the most common form, which could be due to our common practice of walking barefoot at home (microtrauma) or possibly a silk road HLA relationship. Rahnama et al. have performed a study in Kerman, a desert area of Iran, which showed that the frequency of melanoma was greater in men with a peak incidence in the seventh decade of life. ALM was the most frequent clinical form, followed by nodular melanoma.¹⁰ These results were in line with our findings. A study by Noorbala and Kafaie showed that MM in Yazd, a province in central Iran, was a low-incidence cutaneous malignancy with nearly the same incidence from 1988 to 2008. They observed higher incidences in sun-exposed areas, especially the head and neck, and greater frequency in men.¹¹ In another study from Tehran, Iran by Ferdosi et al., males had a higher incidence of MM which was more common in the lower extremities. Housewives among women and farmers among men were most affected by melanoma in that study.¹² Shortcomings of the current study have included a lack of accurate medical records in

our centers. Most of our MM cases were referred at a late stage. Hence, we recommend that health authorities and the public media initiate more vigorous educational campaigns regarding this lethal cancer. In addition, the National Health System should improve the quality and quantity of Cancer Registry offices in order to collect better, more complete data for further research and possible implementation of preventive measures with respect to MM. Further studies might shed better light on the characteristics and incidence of MM in our region, as a part of the larger Middle East region.

Conflict of interest

No conflict of interest is declared.

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