

Five-Year Survival Rate of Cutaneous Malignant Melanoma in Iran

¹N. Esmaili, ²M.A. Mohagegi, ³Z. Safayi Naraghi, ⁴S.Z. Emami Razavi,
⁴M. Chavoshi and ⁵S.H. Emami Razavi

¹Department of Dermatology, Razi Hospital,

²Department of Surgery, Cancer Institute,

³Department of Pathology, Razi Hospital, ⁴Department of Medicine,

⁵Department of Surgery, Imam Khomeini Hospital,
Tehran University of Medical Sciences, Tehran, Iran

Abstract: Cutaneous Malignant Melanoma (CMM) is the most malignant type of skin cancers. The incidence and mortality rates of CMM are rising in almost all countries. This study was performed to investigate the 5-year survival rate of CMM in Iran and comparing these rates among sexes, different age groups, anatomical sites and clinical types of CMM. Patients diagnosed with CMM registered in Cancer Registry Center Tehran, Iran from 1998-2001 were included. The survival rate was assessed in those to whom phone call access was successful (78 patients). They were interviewed and a special questionnaire was filled. Other epidemiologic information was obtained from patient's profiles in this center. The overall 5-year survival rate was 28.6% ($p < 0.05$). The differences between sexes, different age groups and anatomical sites were not significant. The survival rate of CMM obtained in this study, is far lower than most countries. These results necessitates for health care system to plan an effective and comprehensive primary and secondary preventive programs based on education and increasing awareness of people and physicians. Although, more population based studies should be done to investigate more precise database.

Key words: Cutaneous, malignant melanoma, survival rate, education, awareness

INTRODUCTION

Cutaneous Malignant Melanoma (CMM) is the most malignant type of skin cancers (Giblin and Thomas, 2006). Though, it comprises 5% of all skin neoplasms and is the least common type, it accounts for more than 75% of deaths caused by skin cancers (De Vries and Coebergh, 2004; Walsh *et al.*, 2003).

CMM is a significant health problem in western countries (Lee *et al.*, 2007). The incidence and mortality rate of CMM is rising in almost all countries (Elmore *et al.*, 2007; Zemelman *et al.*, 2002; Gandini and Thomas, 2005; William *et al.*, 2000; De Las Heras *et al.*, 1995; Darrel *et al.*, 1996; Langagergaard *et al.*, 2007; Marks, 2000), especially where light-skinned people live (Gandini and Thomas, 2005). In the USA the incidence has increased from 1 per 100,000-15/100,000 in the last 40 years (Bologna *et al.*, 2003). In the UK incidence rates have more than doubled over the last 20 years and in the last 5 years alone CMM incidence has increased by 28% in men and 12% in women (Giblin *et al.*, 2006). Besides, the

incidence of CMM is rising faster than any other cancers (Giblin *et al.*, 2006; Bologna *et al.*, 2003; Denis, 1999).

With increasing incidence and mortality rates, more efforts have been made to design effective programs to increase the survival rate of CMM. The survival rate of CMM has reported in different countries from 40-85% (Giblin and Thomas, 2006; Walsh *et al.*, 2003). Interestingly, in countries with higher incidence rates the survival rate has been highest (De Vries and Coebergh, 2004). Incidence rates in Australia and New Zealand are more than all countries in the world.

The aim of this study is to investigate the 5-year survival rate of CMM in Iran and comparing this rate among sexes, different age groups, anatomical sites and clinical types of cutaneous malignant melanoma.

MATERIALS AND METHODS

The study was performed in cancer registry center. This institute is a national center that registers the data of all cancers in Iran and is considered the national source

for epidemiological studies. It was performed in accordance with the declaration of Helsinki and approved by the ethics committee of Tehran University of Medical Sciences.

Among all patients diagnosed with Melanoma 410 patients had cutaneous MM and 200 had phone number in their file. Seventy eight patients out of 200 had successful phone contact. These patients entered the study. The alive patients or relatives of dead patients who agreed to participate in the study were considered as study population.

A telephone call was made to these patients' homes during the year 2006. The patients and their relatives were interviewed about their situation and a standardized questionnaire was filled. The reason of death of the patients was asked. The death due to other causes than melanoma were excluded from the study. Each cutaneous malignant melanoma was confirmed by a pathology report. The variables studied were survival rate and its relationship with sex, anatomical site and clinical type of CMM. This information was gathered from patients' profiles in cancer registry centre. Descriptive and analytic variables analysis were conducted. Fisher's exact and Pearson correction tests were used. A $p < 0.05$ was considered significant.

RESULTS

Total 78 patients diagnosed with CMM were investigated for 5-year survival rate. Fifty one patients (66.2%) were male and 26 (33.8%) were female. Sex of one patient was unknown.

Overall mean age of diagnosis was 62.29 years (SD = 14.64), with maximum age of 94 and minimum of 26. The mean age of diagnosis in men was 60.6 years (SD = 15.24) and in women was 65.7 years (SD = 12.09).

The most common anatomical site of cutaneous malignant melanoma was in lower extremities (50%, $p > 0.4$). Five patients were died due to other causes than CMM, so the survival rate was measured in a group of 73 patients. The overall 5-year survival rate was 28.6% ($p = 0.000$). Women had better survival rates than men (38.5% compared with 23.5%), although, this difference was not significant. The best survival rate among different age groups was noted in 40-50 years in both sexes (63.6%, $p > 0.1$) (Table 1). Survival rates of CMM in different anatomical sites were compared. Face had the best 5-year survival rate (57.1%, $p > 0.5$) (Fig. 1). Among different clinical types of CMM, lentigo maligna had a better prognosis. Five-year survival of lentigo malignant melanoma was 79%. However, this difference was not significant ($p > 0.2$) (Fig. 2). During the interviews with

Table 1: Five-year survival of CMM in different age groups

Age groups	20-30	30-40	40-50	50-60	60-70	70-80	80-90
Alive (%)	0.0	16.7	63.6	23.1	30.8	17.6	0.0
Dead (%)	100.0	83.3	36.4	76.9	69.2	82.4	100.0

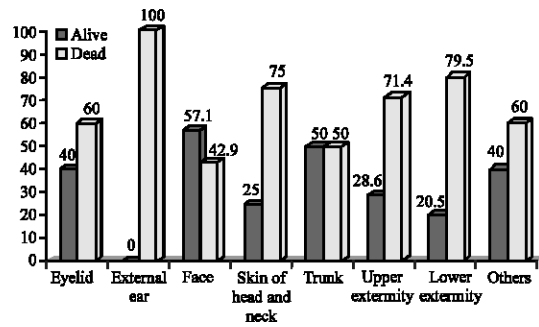


Fig. 1: Five-year survival of CMM in different anatomical sites

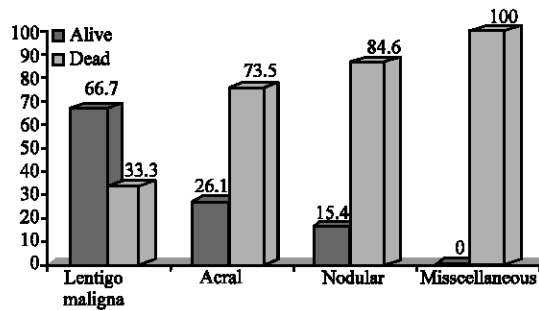


Fig. 2: Five-year survival rate in different clinical types of CMM

patients and their relatives we found that one of the patients (1/3%) had a large melanocytic nevus in the back. About 5.3% of the patients had at least one family member with history of CMM. We asked about photosensitivity and burning in sunlight. About 10.5% had past history of severe sunburn. About 1.3% had a previous personal history of melanoma.

DISCUSSION

Cancer Registry Center (1998) reported that melanoma is the 21st (in men) and 22nd (in women) common cancer in Iran. Melanoma comprises 1% of all cancers in men and 0.8% in woman in Iran. In Europe it is the 17th most common cancer in men and 8th most common in women (De Vries and Coebergh, 2004). It appears that among all neoplasms, cutaneous malignant melanoma is not a prevalent cancer in the world and also in Iran. However, it is predictable that like other countries worldwide where CMM incidence and mortality rates are rising in recent years (Elmore *et al.*, 2007;

Zemelman *et al.*, 2002; Gandini and Thomas, 2005; William *et al.*, 2000; De Las Heras *et al.*, 1995; Darrel *et al.*, 1996), these rates are also increasing in Iran.

However, due to the lack of proper database no recent study on increasing incidence and mortality rates has been performed in Iran. Since, yet no other study has shown an estimation of survival rate of CMM in Iran. With assistance of the National Cancer Registry System this database will assess the magnitude and impact of this disease in the public health system. Based on this information, more effective and practical strategies can be designed to improve the primary and secondary prevention programs of CMM in our country.

Our study investigates the overall 5-year survival rate of CMM among Iranian patients and compares these rates among sexes, different age groups, anatomical sites and clinical types of CMM. Reported that Malignant Melanoma is slightly more common in men than women (1.2-1) (Brick, 2006).

In our study, the mean age of diagnosis was 62 years, about 5 years older than the study performed by Brick (2006). Which reported 57 years in the United States.

Our study showed that the overall 5-year survival rate of CMM was 28.5% which was statistically significant ($p = 0.000$). In one study, the 5-year survival rate of CMM was reported 85% in USA (Walsh *et al.*, 2003). In Europe this rate was approximately 80% (De Vries and Coebergh, 2004). In contrast to these countries where survival rates are high, the survival rate is reported to be 40% in developing countries (Giblin and Thomas, 2006) which is even higher than our results. In many studies survival rates were measured according to the pathologic stage of CMM at the time of diagnosis. Advanced stages are related to poorer prognosis (Giblin and Thomas, 2006; Walsh *et al.*, 2003). Due to the lack of sufficient data on cancer registry profiles we were not able to investigate the prognosis and survival rate of CMM according to the primary stage of disease at the time of diagnosis. Other studies have shown that 5-year survival of CMM is better in women than men (Giblin and Thomas, 2006; Walsh *et al.*, 2003; Zemelman *et al.*, 2002; Stang *et al.*, 2006). Sex is an independent factor that influences the survival (Scoggins *et al.*, 2006). Similarly, this study showed a better survival among women than men. De Vries and Coebergh have reported that the survival rate of melanoma was lower in older ages. Another study has shown that the highest survival rate was under the age of 45 in men and 35 in women (Mackie *et al.*, 2002). Our study shows that the highest survival rate was in the age group of 40-50 years (63.6%).

Our study shows that lentigo maligna has the best survival rate (66.7%) among different clinical types of CMM, considering that we didn't have any superficial spreading melanoma among our patients. One study has reported that superficial spreading has the best survival rate due to the thinner lesions at diagnosis (De Vries and Coebergh, 2004). Henifond *et al.* (2004) have reported that the survival rate of lentigo maligna has been 79%. This study also suggests that among different anatomical sites face had the best survival rate. Congenital melanocytic nevi occur in approximately 1% of newborns. Giant melanocytic nevus is referred to a nevus greater than 20 mm. These nevi are associated with an increased risk of melanoma (Tannous *et al.*, 2005).

In this study, one patient (1.3%) had this feature. These patients should be aware of this risk and be followed to investigate the beginning of a developing melanoma. About 10-20% of patients with CMM have a positive family history. In these group melanomas develops in younger ages and tend to have more dysplastic nevi (Brick, 2006). About 5.3% of our patients had this history. Severe sunburn is related to a higher risk for developing melanoma (Giblin *et al.*, 2006). About 10.5% of our patient had this past history. People with previous personal history of melanoma are at higher risk for developing it again (Lee *et al.*, 2007; Brick, 2006). A study has shown that their risk is 8 times greater than others (Brick, 2006). One of our patients (1.3%) had this history.

CONCLUSION

In conclusion this study showed that the survival rate of CMM in Iran is far lower than developed countries. However, it should be noticed that this study was performed on the basis of information gathered from major referral hospitals of the country. These patients are mainly those who needed complementary and sometimes aggressive therapy due to advanced or metastatic disease. So, the low survival rate achieved may be the result of the special characteristics of this study group and can not exactly reflect the overall prognosis of CMM in Iran. One of the limitations of this study was that a number of patients with CMM did not have phone number or were not accessible via their registered phone number for several reasons including changing their phone numbers and as result of that, only 78 patients entered into the study. It should be considered that other reasons may also play a role, e.g., the malignant pathologic type being more frequent in Iran than other countries. Thus, further studies are to be done to determine a more real and whole population based survival rate using precise epidemiologic indices gathered by an efficient registering system.

In summary these results necessitates for health care system to plan a comprehensive primary and secondary prevention programs. Education to people especially high risk groups to avoid sun exposure and to self-examine their skin has utmost importance. They should be warned to pay serious attention to the changes occurring in color or size of skin nevi. Congenital melanocytic nevi should be followed long life by a physician. All people should be educated to use sunscreens. And they should be aware of the dangers of tanning and sunburns during hobbies and leisure activities. The increase in public and physicians' awareness of CMM is reachable with practical and effective strategies and will ultimately lead to decrease the burden of this disease in our country.

REFERENCES

- Brick, W., 2006. Malignant Melanoma. www. Emedicine.com.
- Bologna, J.L. *et al.*, 2003. Textbook of Dermatology, pp: 1789-1790.
- De Vries, E. and J.W. Coebergh, 2004. Cutaneous malignant melanoma in Europe. *Eur. J. Cancer*, 40: 2355-2366.
- De las Heras, M.E. *et al.*, 1995. Changing epidemiologic characteristics of melanoma 1978-1994. *J. Eur. Acad. Dermatol. Venereol.*, 5: S99.
- Darrell, S. *et al.*, 1996. The incidence of malignant melanoma in the United States: Issues as we approach the 21st century. *J. Am. Acad. Dermatol.*, 34: 839-847.
- Dennis, L.K., 1999. Analysis of the melanoma epidemic, both apparent and real: Data from the 1973 through 1994 surveillance, epidemiology and end results program registry. *Arch. Dermatol.*, 135: 275.
- Elmore, E. *et al.*, 2007. Development and characteristics of a human cell assay for screening agents for melanoma prevention. *Melanoma Res.*, 17: 42-50.
- Gandini, S. *et al.*, 2005. Meta-analysis of risk factors for cutaneous melanoma: I. Common and atypical naevi. *Eur. J. Cancer*, 41: 28-44.
- Gandini, S. *et al.*, 2005. Meta-analysis of risk factors for cutaneous melanoma: II. Sun. *Eur. J. Cancer*, 41: 45-60.
- Giblin, A.V. and J.M. Thomas, 2006. Incidence, Mortality and Survival in Cutaneous Melanoma. *J. Plastic, Reconstruc. Aesthetic Surg.*, 60: 32-40.
- Heniford, B.T., 2004. Lentigo Maligna Melanoma. www.emedicine.com.
- Iran Cancer registry Report, 2006. Incidence and Mortality of Malignant Melanoma in Tehran Metropolitan Area.
- Langagergaard *et al.*, 2007. Birth outcome in Danish women with cutaneous malignant melanoma. *Melanoma Res.*, 17: 31-36.
- Lee *et al.*, 2007. Sun-related behavior after a diagnosis of cutaneous malignant melanoma. *Melanoma Res.*, 17 (1): 51-55.
- MacKie, R.M. *et al.*, 2002. Incidence of and survival form malignant melanoma in Scotland: An epidemiological study. *The Lancet.*, 360: 587-591.
- Marks, R., 2000. Epidemiology of melanoma. *Clin. Exp. Dermatol.*, 25: 459-463.
- Stang, A. *et al.*, 2003. Site and gender specific time trend analyses of the incidence of melanoma in the former German Democratic Republic (GDR) including 19351 cases. *Eur. J. Cancer*, 39: 1610-1618.
- Stang, A. *et al.*, 2006. Time trends of incidence, mortality and relative survival of invasive skin melanoma in Lithuania. *Eur. J. Cancer March*, 42: 660-667.
- Scoggins, C.R. *et al.*, 2006. Gender-related differences in outcome for melanoma patients. *Annal. Surg.*, 243 (5).
- Tannous, Z.S. *et al.*, 2005. Congenital melanocytic nevi: Clinical and histopathologic features, risk of melanoma and clinical management. *J. Am. Acad. Dermatol.*, 52: 197-203.
- Ulmer, M.J. *et al.*, 2003. Trends in invasive cutaneous melanoma in Saskatchewan 1970-1999. *Cut Med. Surg.*, 7 (6): 433-442.
- Walsh, S.M. *et al.*, 2003. Survival of patients with primary pedal melanoma. *J. Foot Ankle Surg.*, 42: 193-198.
- William, F. *et al.*, 2000. A Comparison of Melanoma Mortality among WWII Veterans of the Pacific and European theaters. *Annal. Epidemiol.*, 10: 192-195.
- Yaghubi, R. *et al.*, 2001. Malignant melanoma in khozestan (Iran): 62 case study. *Iranian J. Dermatol.*, 3: 7-14.
- Zemelman, V. *et al.*, 2002. Malignant Melanoma mortality rates in Chile (1988-98). *Int. J. Dermatol.*, 41: 99-103.