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## Original Article

### Assessment Of Risk Factors In Development Of Cutaneous Melanoma- A Clinical Study

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#### ABSTRACT:

**Background:** Cutaneous melanoma (CM) is one of the commonest occurring skin cancers. It is affecting large amount of world population. The present study was conducted to determine the risk factors associated with cutaneous melanoma. **Materials & Methods:** The present study was conducted on 210 patients with features of cutaneous melanoma. In all patients, history of sun exposure, family history, hair and eye colour was assessed. Sun burn was analyzed based on presence of painful erythema at the site of sun exposure. Natural color was considered for skin and eye colour. **Results:** Out of 210 patients, males were 80 and females were 130. The difference was non- significant (P- 0.1). Males had light hairs (50) and dark hairs (30) and females had light hairs (80) and dark hairs (50). Males had light coloured eyes (45) and dark coloured eye (35) and females have light coloured eyes (75) and dark coloured eye (55). In 60 males ephelides were not present and in 20 were present. In females, 40 had ephelides and 90 had not. The difference was significant (P- 0.01). In 15 males and 20 females, there was positive family history, in 55 males and 85 females, there was occupational exposure and in 60 males and 90 females, there was sun burn. The difference was significant (P- 0.01). **Conclusion:** Cutaneous melanoma is most commonly seen in sun exposed area of the body. Common occurrence is back in males and legs on women. Risk factors are family history, sun burn etc.

**Key words:** Cutaneous melanoma, Ephelides, Sun burn

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#### INTRODUCTION

Cutaneous melanoma (CM) is one of the commonest occurring skin cancers. It is affecting large amount of world population. It is due to involvement of melanocytes which are melanin producing cells in the body. There are numerous causative factors for the melanoma. Ultraviolet radiation plays an important role in causing cutaneous melanoma. Positive family history and sun burns are other factors. Congenital nevi, melanocytic nevi are few other precipitating factors. The commonest site in men is back and legs in women. Mouth and intestines are rare sites. The occurrence on pre- existing moles is also not uncommon.<sup>1</sup> The foremost prevention is to avoid going out in sun and the use of proper eye glasses. Pigmentation and photo type are both related to the quantity and type of cutaneous melanin. Both are positive risk factors for the development of CM. Hair colour, eye color and ephelides cannot be in a direct causal relationship with CM.<sup>2</sup> Bliss JM et al<sup>3</sup> in their study of risk of cutaneous melanoma associated with pigmentation characteristics and freckling systematically analyzed 10 case-control studies and confirmed that people with UV radiation exposure have more

chances of development of CM as compared to those with little exposure to the sun light. It has been observed that the presence of large, multiple melanocytic nevi increases the chances of developing CM. Certain occupational factors play an important role in the lesion. Farmers, workers, labourers and those working in open environment are more prone to develop CM than those working in a closed area such as in offices. The present study was conducted to determine the risk factors associated with cutaneous melanoma.

#### MATERIALS & METHODS

The present study was conducted in the department of Skin. It comprised of 210 patients with features of cutaneous melanoma. All were informed regarding the study and written consent was obtained. Ethical clearance was taken prior from institutional ethical committee. General information such as name, age, gender etc. was recorded. In all patients, history of sun exposure, family history, hair and eye colour was assessed. Sun burn was analyzed based on presence of painful erythema at the site of sun exposure.

Natural color was considered for skin and eye colour. Results thus obtained were subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

**RESULTS**

**Table I Distribution of patients**

Total- 210		
Males	Females	P value
80	130	0.1

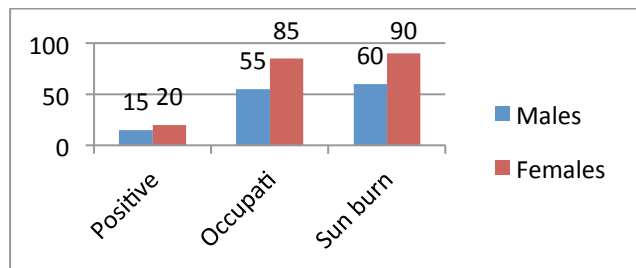
Table I shows that out of 210 patients, males were 80 and females were 130. The difference was non- significant (P- 0.1).

**Table II Characteristics in patients**

Parameters	Males	Females	P value
<b>Hair color</b>			
Light	50	80	0.1
Dark	30	50	
<b>Eye color</b>			
Light	45	75	0.21
Dark	35	55	
<b>Ephelides</b>			
Not present	60	90	0.01
Present	20	40	

Table II shows that males had light hairs (50) and dark hairs (30) and females had light hairs (80) and dark hairs (50). Males had light coloured eyes (45) and dark coloured eye (35) and females have light coloured eyes (75) and dark coloured eye (55). In 60 males ephelides were not present and in 20 were present. In females, 40 had ephelides and 90 had not. The difference was significant (P- 0.01).

**Graph I Various parameters in patients**



Graph I shows that in 15 males and 20 females, there was positive family history, in 55 males and 85 females, there was occupational exposure and in 60 males and 90 females, there was sun burn. The difference was significant (P- 0.01).

**DISCUSSION**

Cutaneous melanoma is one of the skin cancers most likely to occur on sun exposed site. International agency for research on Cancer defined melanocytic lesions as brown to black pigmented macules or papules which are well defined and darker in colour than adjacent teeth.<sup>4</sup> In a study by Marcelo et al<sup>5</sup>, on 259 patients diagnosed with CM of both genders were included in the study. Similar number of cases was put as controls. Attempt was taken to involve people of same location. Presence and size of nevi, pigmentation characteristics, history of cutaneous neoplasia, sun exposure, and sunburn were evaluated which showed that atypical melanocytic nevi, personal history of non-melanoma skin cancer, multiple melanocytic nevi, family history of CM and occupational sun exposure were risk factors in both children and adults. In present study, out of 210 patients, males were 80 and females were 130. We found that males had light hairs (50) and dark hairs (30) and females had light hairs (80) and dark hairs (50). Males had light coloured eyes (45) and dark coloured eye (35) and females have light coloured eyes (75) and dark coloured eye (55). In 60 males ephelides were not present and in 20 were present. In females, 40 had ephelides and 90 had not. Similar findings were seen in study by Elwood et al.<sup>6</sup> Rhodes<sup>7</sup> in year 1980 conducted a study on 138 cases and 217 controls to find out any relation with risk factors and occurrence of cutaneous melanoma which revealed that sun exposure is one of the contributing factors in developing CM as compared to controls. Similarly Barel<sup>8</sup> in year 1983 conducted a study which comprised of 287 cases and 574 controls which showed that maximum cases were of nevi and melanoma found on sun exposed sites. In present study we found that there was positive family history seen in 15 males and 20 females, occupational sun exposure in 55 males and 85 females and sun burn in 60 males and 90 females. This is in agreement with Holman et al.<sup>9</sup> It has been observed that melanoma occurs due to damage of DNA due to UV light. Self immunity plays an important role in developing skin cancer and it has been found that presence of more than 50 moles predisposes a person to CM. Socio- economic conditions and professional factors influences the outcome of melanoma Studies shows that loss of tumor suppresser genes or mutations also increases the chances of melanoma in population. Sara et al<sup>10</sup> in their study found that common naevi was an important risk factor with a substantially increased risk associated with the presence of 101–120 naevi compared with <15. The type of study and source of cases and controls were two study characteristics that significantly influenced the estimates. Weiss J et al<sup>11</sup> in their study of analysis of risk factors for malignant melanoma suggested that 74 patients who developed cutaneous melanoma had positive family history and hence strongly advocated the role of positive family history in this context. Similarly, Moore<sup>12</sup> conducted a case control study to find out the association between cutaneous melanoma and sun burn found that most of the patients of both genders had history of sun burn and concluded that people working under direct sun exposure are more prone to this cancer as compared to others.

**CONCLUSION**

Cutaneous melanoma is most commonly seen in sun exposed area of the body. Common occurrence is back in males and legs on women. Risk factors are family history, sun burn etc.

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