

Promote Melanoma Prevention through Sun Protection

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Introduction

Malignant Melanoma (MM) is the most deadly among skin cancers. The incidence of MM is increasing rapidly and faster than any type of cancer worldwide, albeit the recent figures from countries with high risk of melanoma denote a tendency of a relative decrease of its incidence in younger age groups due to the public campaigns that targeted to enhance awareness about sun protection.

Some Epidemiologic Data

- 1- The incidence is more than doubled over the past 25 years
- 2- This propensity continues across all age groups at a rate of over 3 % per year
- 3- Worryingly, MM is the most prevalent cancer in 25-29 year old females

As etiopathogenetic factors for the development of MM genetic predisposition, endogenous and environmental factors are well-documented. Two major risks have been described as sun sensitivity and exposure to UV radiation. Age, gender, host and family history, the presence of multiple nevi, indoor tanning have been proposed additional risk factors. Oral contraceptive use, smoking, alcohol consumption and diet have also been shown as other factors.

Sun sensitivity is associated with tendency to burn and inability to tan due to phenotypic characteristics such as red hair /light hair color, blue or green eye color, fair skin, presence of freckles. Intense and/or intermittent sun, which may be evaluated indirectly by history of sunburns, seems to be a major determinant of the risk of MM. The risk of melanoma development in people who have had sunburns is double that in people who have never had sunburns. Sunburns, particularly in childhood and before 18 years old at the highest risk.

Sunbeds or indoor tanning has been gained popularity since the early 1980's in the western world, especially in the sun-deprived areas. UVA dosages delivered by sunbeds are 5-15 times more than that is delivered by the summer midday sun in Mediterranean region. Indoor tanning before age 35 increases a person's risk of getting melanoma by 75 percent. Exposure to UV light from both the sun and sunbeds is the most important preventable and also modifiable risk factor from MM.

Controversial Issues

Sunscreens are among major protective measures against to harmful effects of UVR light. However, there are some controversies and inconclusive results about sunscreen use. Epidemiological evidence supporting sunscreen use for MM prevention is limited and case-control studies report conflicting results. A population based, matched, case-control study

A comprehensive Medline search of articles published 1966-2003 on sunscreen use showed that no association exists between MM and sunscreen use. Failure to control for confounding factors may cause false positive associations between MM and sunscreen use. Moreover, it may take decades to show protective association of sunscreens with MM.

Sunscreen use may result in prolonged duration of intentional or recreational sunlight exposure and may increase the total amount of UVR. Therefore, it is reasonable to consider that only sunscreen use is not adequate for sun protection, other methods should be along with sunscreens

UVB is primary carcinogen; however recent studies indicate that UVA also plays a role in carcinogenesis through free radical generation and vitamin D degradation. As initial sunscreens were developed mainly with UVB protective effect, but little / without UVA protective effect, today's sunscreens include UVA blockers, but not adequately. A randomized trial performed in Nambour showed that regular sunscreen use by light skinned middle aged and older subjects living in sunny areas can decrease the risk to develop MM. Nevertheless, if the goal of sun exposure is to obtain a tan, quantity of sunscreen used, the sun protection factor, the inclusion UVA filters in formulation do not change the problem.

Another Issues of Debate

- A significant benefit from regular sunscreen use has not yet been convincing for primary prevention of cutaneous MM
- Percutaneous absorption and endocrine disrupting activity of small-sized organic and nano-sized inorganic UV filters have been reported
- Potential vit D deficiency by sunscreen use is on the agenda
- Some organic UV filters (PABA derivatives, cinnamates, benzophenones, and octocrylene) have been described to cause photoallergy

What Do We Need?

- UV exposure is the only environmental factor ever linked to melanoma, it is still reasonable to avoid excessive sun exposure and sunburn especially in poor tanners
- However the impact of strict sun avoidance, which should not be recommended, may take years to be apparent as Vitamin D deficiency is a now a common health issue in Caucasian populations with a significant impact on health in general

- Larger molecular, non-toxic/non-allergic, broad spectrum sunblockers- improved formulas – and also optimal use directions are necessary

(Modern sunscreens may be about four-fold more effective in preventing cutaneous MM than old sunscreens)

Key Points

- Sunscreens should not be used to prolong the amount of time spent in the sun
- Clothing, hats and sunglasses should be used as an adjunct to, not a substitute for sunscreen against the harmful effects of UVR
- Those at high risk of cutaneous MM may possibly benefit from consistent, daily use of broad-spectrum sunscreen

Conclusion

Although the controversy is ongoing about the efficacy of sunscreens in melanoma prevention and evidence is currently not enough, we should encourage their use as well as other sun protection strategies[1-13].

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