

Melanoma: A mini review

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ABSTRACT

Skin cancer is the most prevalent malignant form of cancer found in a wide range of population. More than a million cases of skin cancer are registered every year worldwide. Risk factors for the development of melanoma are exposure to solar UV (Ultra Violet) radiation, dysplastic nevi syndrome and a family history of melanoma. The incidence of melanomas has been gradually rising, leading to a growing public health crisis. There are a lot of risk factors which may increase the probability of developing melanoma in a person. When something goes wrong with the melanin-producing cells (melanocytes) that give your skin colour, melanoma occurs. But new cells may begin to grow out of control when some cells develop DNA damage and can eventually form a mass of cancer cells. It's not clear exactly what harms DNA in skin cells and how this contributes to melanoma. It is possible that melanoma is caused by a variety of factors, including environmental and genetic factors. Prevention and early detection remain the primary objectives in the fight against malignant melanoma. Multidisciplinary strategy using the best expertise of those concerned is our best defences.

Keywords: Skin cancer; Melanoma; Dermatology

INTRODUCTION

Skin cancer is the most prevalent malignant form of cancer found in a wide range of population, with more than a million cases registered every year worldwide. There are two major types of skin cancer which are classified on the basis of their place of origin and clinical properties. Skin cancer can be

1. Non melanocytic skin cancer
2. Malignant melanoma

Non melanocytic skin cancer includes two subtypes namely-Basal Cell Carcinoma (BCC) and Squamous Cell Carcinoma (SCC).

1. Basal Cell Carcinoma: It is the most common type of skin cancer where the cancer cells bear the analogy of the epidermal basal cells, and hence, are also known as carcinoma epithelioma
2. Squamous Cell Carcinoma: This form of cancer begins in epidermal squamous cells found in the tissues forming the epidermis, internal lining of organs, passages of respiratory and digestive tracts
3. Melanoma: It is most fatal form of skin cancer as it has the tendency to metastasize at a rapid rate throughout the body. They are generally referred to as skin neoplasia [1,2]

MELANOMA

The vicious, therapy-resistant malignancy of melanocytes is known as malignant melanoma. Globally, the incidence of melanoma has been gradually rising, leading to a growing public health crisis. Significant risk factors for the development of melanoma are exposure to solar UV (Ultra Violet) radiation, dysplastic nevi syndrome and a family history of melanoma. Researches are being conducted to study the associations between genetic and environmental risk factors that foster melanomagenesis.

The reduced exposure to UV radiation and control high risk patients has the ability to lower the risk of melanoma among the population. For optimized diagnosis and staging, biopsies of the primary tumour and sampling of draining lymph nodes are deemed necessary. Several pathological subtypes have been identified and need to be recognized. Early disease therapy is primarily surgical, with the use of adjuvant therapy, the latter showing a limited benefit [2,3].

RISK FACTORS

There are a lot of risk factors which may increase the probability of developing melanoma in a person [4]. Some of the common risk factors include:

- Excessive UV exposure
- Moles

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- Family history of melanoma
- Race or ethnicity
- Age
- Weak immune system due to a medical condition or medications
- Specific inherited genetic conditions and so on

CAUSES OF MELANOMA

When something goes wrong with the melanin-producing cells (melanocytes) that give your skin colour, melanoma occurs.

Skin cells typically grow in a regulated and organized manner; healthy new cells force older cells to the surface of your skin, where they die and ultimately fall off. But new cells may begin to grow out of control when some cells develop DNA damage and can eventually form a mass of cancer cells.

It's not clear exactly what harms DNA in skin cells and how this contributes to melanoma. It is possible that melanoma is caused by a variety of factors, including environmental and genetic factors. Doctors also say the leading cause of melanoma is exposure to ultraviolet (UV) radiation from the sun and from tanning lamps and sheets. Not all melanomas are caused by UV light, especially those that occur in places on your body that do not receive sunlight exposure. This suggests that your risk of melanoma is contributed by other variables [5].

PREVENTION TECHNIQUES

If you have inherited risk factors, make sure to examine yourself more regularly and also visit your dermatologist for comprehensive professional skin examinations [6].

Start early: Special care is needed for children in melanoma-prone families. At puberty and during adolescence, some physicians prescribe skin checks. The good news is that the survival rate of familial melanoma is much higher than that of non-familial melanomas, most likely because they are closely watched by these families and melanomas are typically detected when the cancer is still early and more likely to be cured.

Protect against UV rays: By taking easy, smart preventive steps, you can reduce the melanoma risk posed by UV radiation. Safeguard your skin every day even though it's cloudy, against the sun. Absolutely stop indoor tanning.

TREATMENT METHODS

Although different types of treatment are used for patients with melanoma, there are five standard treatments that are used mostly [7].

- Surgery
- Chemotherapy
- Radiation therapy
- Immunotherapy
- Targeted therapy

Surgery: The main treatment for all stages of melanoma is surgery to remove the tumour. To extract the melanoma and some of the normal tissue around it a large local excision is used. Skin grafting can be used to cover the wound caused by surgery (taking skin from another part of the body to replace the skin that has been removed). Surgery may be done to improve the patient's quality of

life by controlling symptoms.

Chemotherapy: Chemotherapy is a treatment for cancer that uses medications to stop the development of cancer cells, either by destroying or preventing the division of the cells. The manner in which chemotherapy is administered depends on the form and stage at which the cancer is treated. However, there are many side effects in this treatment and hence, Chemotherapy is now rarely used to treat melanoma. Targeted treatments and immunotherapy are the preferred treatment options.

Radiation therapy: High-energy x-rays or other forms of radiation are used in this procedure to destroy cancer cells or prevent them from developing. To deliver radiation to the region of the body with cancer, external radiation therapy uses a machine outside the body. For the treatment of melanoma, external radiation therapy is used and may also be used as palliative therapy to alleviate symptoms and enhance the quality of life.

Immunotherapy: To cure cancer, this technique uses the patient's immune system. To improve, steer, or restore the body's natural defences against cancer, substances made by the body or made in a laboratory are used. This therapy for cancer is a type of biologic therapy. Immune checkpoint inhibitor therapy and PD-1 and PD-L1 inhibitor therapy are the types of immunotherapy being used in the treatment of melanoma.

Targeted therapy: Targeted therapy is a procedure that detects and attacks individual cancer cells using medications or other substances. Targeted treatments typically do less damage to normal cells than radiation therapy or chemotherapy does. Signal-transduction inhibitor therapy, Oncolytic virus therapy and Angiogenesis inhibitors are the types of targeted therapy used or being researched on in the treatment of melanoma. In the treatment of melanoma, new targeted therapies and combinations of therapies are also under research [8].

CONCLUSION

Prevention and early detection remain the primary objectives in the fight against this cancer as we reach the new century, pending potentially promising advances in the treatment of advanced malignant melanoma. We may be able to minimize the incidence and mortality of malignant melanoma with increased clinical education, public knowledge, patient education, and scientific advances. As the incidence continues to increase, however a multidisciplinary strategy using the best expertise of those concerned is our best defences against this potentially deadly neoplasm.

CONFLICT OF INTEREST

None

REFERENCES

1. Orthaber K, Pristovnik M, Skok K, Perić B, Maver U. Skin cancer and its treatment: Novel treatment approaches with emphasis on nanotechnology. *J Nanomaterials*. 2017;2017:1-20.
2. Das P, Deshmukh N, Badore N, Ghulaxe C, Patel P. A Review Article on Melanoma. *J Pharm Sci & Res*. 2016;8:112-117.
3. Markovic SN, Lori AE, Ravi DR, McWilliams R, Lisa KA, Edward TC, et al. Malignant Melanoma in the 21st Century, Part 1: Epidemiology, Risk Factors, Screening, Prevention, and Diagnosis. *Mayo Clin Proc*. 2007;82:364-380.
4. CancerNet. Melanoma: Risk factors and prevention. 2020;1:1.

5. Scott Litin: Mayo Clinic Family Health Book: Mayo Clin: 2020
6. Halpern AC, Marghoob AA, Reiter O. Melanoma risk factors: The risks, the causes, what you can do. Skin Cancer Found. 2020;1:1.
7. PDQ Adult Treatment Editorial Board. PDQ Melanoma Treatment. Bethesda. National Cancer Inst. 2020;1:1.
8. NHS. Skin cancer (melanoma). NHS Health A-Z. 2020;1:1.