Review Article

Characteristics of Melanoma: A Review on Human Skin Cancer

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Abstract

This paper aims to review the generality of Melanoma by analyzing articles related to the subject. Melanoma is one of the most aggressive types of skin cancer, with limited therapy options due to multidrug resistance and, as a result, a low patient survival rate. It is caused by the DNA damage and mutation due to extreme exposure to UV radiation and other factors such as having dysplastic moles, fair skin; family history of melanoma; weakened immune system and; severe, blistering sunburn. Melanoma cancer is generally identified by the formation of new moles or a variation in the morphology of an existing mole. The ABCDE list is a method commonly used to distinguish between a normal mole and a melanoma: Asymmetrical, Border, Color, Diameter, and Evolution of its form. Surgery, chemotherapy, biological therapy, or radiation therapy, or combinations of these are the conventional treatments for melanoma.

Keywords: ABCDE; Malignant Melanoma; Melanocytes; Risk Factors; Skin cancer

Introduction

Skin cancer is the uncontrollable increase of skin cells caused by DNA damage and mutation [3]. Melanoma, basal cell carcinoma, and squamous cell carcinoma are all kinds of skin cancer, melanoma however is the most lethal and unpredictable, accounting for 75 percent of all skin cancer deaths due to its being multi-drug resistance [1,2,5]. Melanomas are made up of melanocyte cells, the pigment cells or melanin- producing cells, and are usually brown or black in color. Melanomas are commonly generated by UV radiation, which destroys the DNA of skin cells [2,4].

The melanocytes in the skin may begin to grow abnormally and become malignant if they are exposed to too much ultraviolet light. This disease is more prominent in people with fairer skin and those that have blue eyes. Melanoma is the medical term for this illness, and is characterized by the emergence of new moles or alterations in existing moles. Melanoma requires prompt treatment, after which it can be readily cured. However, if it is not detected early on, it will spread deeper into the skin. This even spread throughout the organs in the body. Surgical removals of the tumor, supportive treatment, chemo- and immunotherapy, or radiation therapy are all options for melanoma treatment [2].

This review aims to look at the generality of Melanoma, one of the deadliest types of skin cancer, by examining and evaluating published articles and journals on the subject. The signs and symptoms, classification, causes and risk factors, as well as treatment, will all be covered.

Malignant Melanoma Generality

Signs and Symptoms of Melanoma

Melanoma cancer is generally identified by the formation of new moles or a variation in the morphology of an Figure 1. Differentiation between a normal mole and a melanoma using the ABCDE list. Existing mole. Normal moles are usually singled-color, round or oval, and less than 6 millimeters in di-
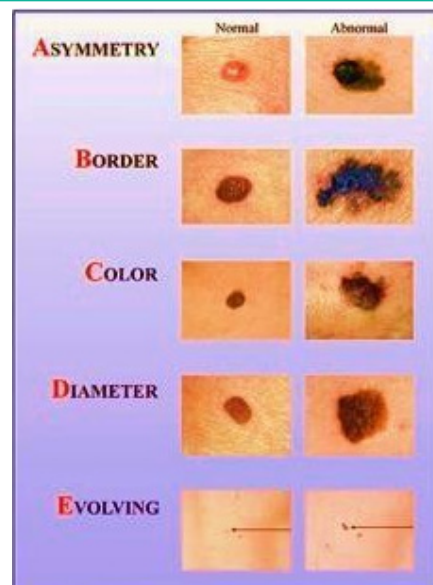

Figure 1: Differentiation between a normal mole and a melanoma using the ABCDE list. (© 2021 The Eye associates).

Figure 2: Types of Malignant Melanoma: (a) Cutaneous melanoma (b) Mucosal melanoma (c) Ocular melanoma.

ameter, whereas melanoma has the following characteristics distinguished from the normal moles using the ABCDE list [4]: Asymmetrical, with an irregular shape that cannot be divided in half; Border, unlike normal moles, melanoma is uneven and rough; Color, Melanoma is typically a combination of two or three colors; Diameter, which is usually greater than 6 millimeters in comparison to normal moles and; Enlargement or evolution, Melanoma normally develops from moles that alter shape and size over time. Additionally, melanoma is irritating and can bleed.

Classification

Cutaneous melanoma (Figure 2a) is the most prevalent form of melanoma, which can occur on the face, sole/foot, rear of the body, stomach integument, and other areas. Mucosal melanoma (Figure 2b) is a type that develops in the mucosal tissue that lines bodily cavities and hollow organs, exist in locations such as the head and neck region (including the nasal cavity, mouth, and esophagus), as well as the rectum, urinary system, and vagina. On one hand, because the eyes have melanocytes, or pigment-producing cells, they can also develop melanoma, which is known as ocular melanoma.

Causes and Risk Factors

Melanoma is mostly caused by extreme exposure to sunlight. The precise wavelengths of sunlight that induce melanoma, is unknown. Melanoma is more likely to develop in persons who have certain risk factors, according to research. Anything that raises a person's likelihood of having an illness is referred to as a risk factor [2]. There are six well- established risk factors for melanoma: having Dysplastic moles or abnormal moles that many people have. Melanoma risk is highest in those with a large number of dysplastic nevi and a family history of the disease; having fairer skin, that burns or freckles readily (and who also have red or blond hair and blue eyes) is high at risk than in people with dark complexion. Because lighter skin is more quickly harmed by the sun, Caucasians are significantly more likely than black people to develop melanoma;

Family history, a risk factor includes having two or more close relatives who have had this condition so it is important to know if one has a family history of the illness; Weakened immunity melanoma is more likely to develop in people whose immune systems have been weakened by certain malignancies, medicines administered after organ donation, or HIV; Sunburns that are severe and blistering, melanoma is more likely in people who have experienced at least one severe, blistering sunburn as a kid or teenager. Finally, extreme exposure to Ul-

traviolet (UV) radiation, experts believe that an increase in the amount of time people spend in the sun is linked to an increase in the global incidence of melanoma. UV radiation from artificial sources, such as sunlamps and tanning booths, can also cause skin damage and raise the risk of melanoma.

Treatment

The conventional treatment for melanoma is surgery to excise the tumor. To reduce the chances of any cancer remaining in the area, it is vital to remove not just the tumor but also some normal tissue around it. Chemotherapy is the application of chemicals to cancer cells in order to kill them. It's a systemic medication, which means it can influence cancer cells all over the body. Biological therapy (also known as immunotherapy), one of melanoma treatment methods, is a type of treatment that harnesses the body's immune system to fight cancer or reduce the negative effects of various cancer treatments, either directly or indirectly. Melanoma that has progressed to the brain, bones, and other regions of the body is often treated with radiation therapy [2].

Conclusion

Melanoma is one of the most aggressive types of skin cancer, with limited therapy options due to multidrug resistance and, which denotes to a low patient survival rate. Melanoma has been more common over the last 50 years, with more than 160,000 new cases diagnosed each year around the world [1]. The ABCDE list method is commonly used to distinguish between a normal mole and a melanoma. Fairer skinned people with blue eyes are more susceptible to skin cancer than their counterparts with darker complexion. When this condition is treated early on, the chances of survival are better. Cancer cells might grow deeper into the skin if detected late. It also spread throughout the rest of the body. Finally, surgery is the conventional treatment for melanoma; but, depending on the doctors' diagnosis, they may also employ chemotherapy, biological therapy, or radiation therapy, or a combination of these treatments.

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