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Sunburn: New in Treatment

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Abstract

Sunburn is a common pathology not only at seaside resorts but also on the continents. In USA 34% of thepopulation had encountered at least one sunburn during the year.

The occurrence of sunburn is associated with direct damage to the DNA of skin cells by ultravioletradiation. The main symptom is pain with various manifestations on the skin.

Between May 15th 2000 and July 30th 2024, we treated 357 patients with sunburn. 174 were men,151 were women, and 32 children. The ages ranged from 3 to 78 years old.

The most effective was the use of 10% Povidone Iodine ointment. The treatment is inexpensive.

Keywords: *Sunburn, Photosensitivity.*

Introduction

Sunburn is a common pathology not only at seaside resorts but also on the continents. In USA 34% of the population had encountered at least one sunburn during the year [1]. In Germany 41% [2]. When exposedto sunlight, the process of increased melanin production is triggered and the skin turns yellow, then acquires a brown tint - a tan occurs. This is the body's natural protective ability to prevent burns.

In the first two days, when the photoprotective function of the skin is not yet sufficiently activated, stayingon the beach during the period of intense solar radiation, mainly the ultraviolet part of the spectrum (UVAand UVB) from 10 am to 4 pm, leads to burns of varying severity. People with lighter skin tone and childrenare more susceptible to this radiation. Sometimes staying in the open area or in the water for 20-30 minutes is enough to get a pronounced burn. Clouds cannot completely block the harmful effects of ultraviolet radiation, so a burn can occur even on a cloudy day. In this case, it is always necessary to take into account the reflective effect of water, sand, concrete, etc. The risk of sunburn is increased in peopletaking tranquilizers, oral contraceptives, antibiotics, furosemide, nitrofurantoin [3,4].

The occurrence of sunburn is associated with direct damage to the DNA of skin cells by ultraviolet radiation and their death [5], which is manifested in the rejection of dead cells in the form of peeling. The main complaint is pain, the intensity of which gradually increases and reaches a maximum 6-8 hours after receiving a burn. Depending on the severity of the lesion, patients may also complain of an increase in body temperature, chills, general weakness, pain, thirst, the appearance of blisters on the skin. Upon examination, four degrees of sunburn can be distinguished:

1st degree - erythema (redness) of the skin;
2nd degree - skin burn with the appearance of small bubbles (vesicles) or large blisters (bullae) filled withliquid;
3rd degree - more severe skin burn with the appearance crust formation;4th degree - damage of both layers of the skin and underlying tissue.

Material

Between May 15th 2000 and July 30th 2024, we treated 357 patients with sunburn. 147 were men,
151 were women, and 32 children. The ages ranged from 3 to 78 years. 1st degree – 267; 2nddegree- 78; 3rd degree – 12; 4th degree - not observed [1]
Surface of sunburn was 9-65% of body.

Methods

The most effective was the use of 10% Povidone Iodine ointment which quickly, usually in two hours reduces the intensity of pain. For a first-degree burn, the patient is recommended to take a warm 10 to 15 minutes shower, after which the ointment is applied in a thin layer to dry skin for 6 hours. Repeating the procedure two or three times every 6 hours and with each subsequent time, the ointment is applied only to painful areas of the skin. Using 10% Povidone Iodine ointment more than 3 times is undesirable, as it causes excessive dryness of the skin. After completing the procedures any softening cream is applied.Mild painkillers are always prescribed (Mefenamic acid or Paracetamol).

Treatment of sunburn with blisters begins with opening them with a sterile needle and squeezing out theexudate. Removing blister films is not recommended, as this leads to the formation of an open painful wound, drying and roughening of the skin. Further therapy is no different from the treatment of first- degree burns. If blisters form again, they are opened. The development of infection with this treatment method does not occur. On the second day, the patients' well-being is restored.

Results

In patients with grade 1 and 2 sunburn, recovery occurred within 24-48 hours**.**
In cases where careless patients get sunburned again and the skin becomes rough and very painful, a single application of 10%

Povidone Iodine cream is recommended. In the future, only moisturizing and softening creams are used. Visiting the beach is allowed after the disappearance of pronounced symptomsof the burn. Usually this occurs by the 5th day

Prevention

First of all, you should avoid being in direct sunlight from 10 am to 4 pm, especially in the first two days, even on cloudy days. Extremely important to correctly use sunscreens along with optimal time spent in the sun. It is crucial in preventing skin cancer.

Conclusion

The use of 10% Povidone Iodine 10% ointment for sunburn is very effective and economically inexpensive(2,5€ in Greece) and can be used also for any thermal burns.

It makes sense to dwell on thermal burns of the soles of the feet, which occur when walking on hot sandor small beach stones. In these cases, blisters usually appear, filled with liquid, often purulent. Treatmentconsists of opening the blisters, removing all necrotic tissue. The feet are immersed in a bath with a solution of Povidone Iodine for 15-20 minutes, and then bandages with Povidone Iodin ointments are applied, which are changed two or three times a day until the wounds are cleansed and dry, clean surfaces appear. Treatment usually takes 5-7 days. In the available literature, we were unable to find a description of an isolated sunburn of the scalp, which has some features. Regardless of the thickness of the hair on the head, reddening of the skin with mild edema occurs, which on the second- or third-day spreads to theforehead and eyelids. Characteristic puffiness of the upper part of the face occurs. As a rule, it is observedonly in adolescents and young women. In addition to the above method, diuretics should be used and, insome cases, small doses of corticosteroids. Recovery and visiting the beach are allowed on the 3rd-4th day with the obligatory wearing of a hat.

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