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A CHILD WITH VITILIGO

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Abstract:

Vitiligo is a chronic skin condition which affects 0,5-2% of the world's population, without any sex or ethnical predilection. Clinically it is characterized by the development of well-defined depigmented macules. Although its etiopathogenesis is exquisitely compound and remains not fully anderstood, it is known that it results from the destruction of melanocytes present in the skin. The aim of this paper is to present vitiligo clinical picture in a children population, its etiopathogenesis and available therapeutical methods. There are many therapeutic options for vitiligo, none of which is fully effective, hence appropriate patients education concerning various medical and cosmetic therapies, as well as the psychological aspects of the disease, is extremely important.

Key words: vitiligo, child, melanocytes, phototherapy, vitiligo treatment

Introduction

Vitiligo is an acquired skin pigmentation disorder that results from the death of melanocytes. It is characterized by well-defined, sharp-edged discoloration spots, usually on both sides of the body. Often the onset of spots appears on areas of the skin that are exposed to the sun, which is more noticeable in dark-skinned people. Changes may also occur in the oral cavity or nasal cavity, and vitiligo itself may lead to hair discoloration [1].

The dermatosis in question is chronic and idiopathic and affects from 0.5% to 2% of the population, depending on the geographical location. There was no difference in the incidence

between males and females. In over 50% of patients, it begins between the age of 10 and 30. According to estimates, approximately 25% of vitiligo cases occur under the age of 10, mainly between the ages of 4 and 8, and 30% of them run in families [2].

Albinism, although not a life-threatening disease, is a dermatosis that can have serious psychological and social consequences, especially in preschool and school-age children. Most patients perceive their pigmentation disorder as a significant cosmetic defect and a factor that significantly reduces the quality of everyday life. Although vitiligo is not contagious, people struggling with the disorder in question may be unjustifiably socially stigmatized, which is additionally supported by the characteristic clinical picture of dermatosis, in which the lesions often affect exposed parts of the body. This image is especially noticeable in people with dark complexion, in whom the contrast between healthy and diseased skin is particularly noticeable. According to the available data, up to 55% of patients suffering from vitiligo are depressed, which should be taken into account by health care professionals who treat these people [3].

Etiopathogenesis

Vitiligo is a disease with an incompletely explained pathogenesis, paying attention to its multifactoriality and polygyny character. So far, several theories have been formulated that try to explain the etiopathogenesis of this dermatosis, including:

- Autoimmune theory: this suggests that the destruction of melanocytes is due to an immune disorder. This is confirmed by studies indicating more frequent comorbidity vitiligo with other autoimmune diseases, including Addison's disease, inflammation the choroid of the eye, retinitis, Hashimoto's disease, type I diabetes or psoriasis [4]. This theory is also supported by the more frequent occurrence of antibodies to melanocytes, as well as the presence of a cellular immune response mediated by lymphocytes T CD 8+, which may induce the destruction of melanocytes [5].

- The theory of oxidative stress: it proves the participation of free radicals in the development of dermatosis. During melanin synthesis, the elimination of metabolites may be disturbed toxic substances such as levodopa or dihydroxyindole, which results in build-up hydrogen peroxide and the development of oxidative stress [6].

- Neural theory: it assumes the destruction of melanocytes through the release of cytotoxic mediators from cutaneous nerve endings. The basis of this theory was a statement higher concentration of catecholamines or vanillic acid in urine [7].

Other, less popular theories include: the congenital defect theory melanocytes, the autocytotoxic theory or the viral theory (has been shown to be more frequent vitiligo in people infected with CMV, HIV or HCV) [1].

Clinical picture of a child with vitiligo

Characteristic of vitiligo are discoloration spots, well demarcated from healthy skin. The spots are white in color, round or oval in shape and up to several in size centimeters. There is a division of vitiligo into a segmental and non-segmental form. In children, the segmental form is more common, which is characterized by its presence one or more spots confined to one half

of the body. In this form of the disease, progression it is fast [8]. The non-segmental form, consisting of of two types: focal form (one or more spots with limited location, which do not meet the criteria of the segmental form) and the generalized form (it occupies most of the body than the focal form). We divide the generalized form into two subtypes: the face-related form and limbs and vitiligo (a rare form covering more than 90% of the area body) [1].

This dermatosis does not usually cause discomfort, but there are cases accompanied by itching - most often along with inflammation at the periphery of whitewash spots [8]. Interesting and noteworthy is also the Koebner phenomenon, which is an appearance new lesions at the site of an injury (such as burns or abrasions). The mentioned phenomenon it occurs even in 20-60% of patients with vitiligo [1]. Due to frequent stigmatization children suffering from vitiligo, especially among their peers, to the clinical picture the occurrence of depression and other mood disorders should also be added [4]. Albinism has an unpredictable course of the disease: it can last for a long time years, and to be rapidly progressive. The disease usually lasts for many years, but it can also have a tendency to resolve spontaneously [10].

Diagnostics

Physical examination is the basis for the diagnosis of vitiligo. When in doubt a skin biopsy may be performed for histopathological examination. On this dermatosis will be indicated by the loss of pigment cells in the dermis and in the epidermis, keratinocyte aquatic degeneration or lymphocyte inflammatory infiltration type T on the fringes of lesions [10]. It may be helpful in assessing the extent of disease outbreaks the Wood's lamp test [11]. One should also remember about the fact of frequent the occurrence of comorbidities (mentioned earlier in the discussion of the theory autoimmune), so it is important to conduct a comprehensive examination the subjective and physical characteristics of these diseases, and in case of further suspicions, ordering additional tests (e.g. blood count or thyroid hormone levels) [1].

Differential diagnosis should include the following diseases: mycosis of the skin, tinea versicolor, white dandruff, discoloration marks, skin depigmentation when using glucocorticosteroids, post-inflammatory depigmentation, granuloma mycosis, second order syphilis, drug lesions, Ito hypomelanosis, sclerosis lumpy, piebaldism, post-traumatic changes (e.g. after burns), scleroderma, Addison's or leprosy [1].

Treatment

Treatment for vitiligo is often a challenge as none of the treatments available today the methods are not guaranteed to be effective. The choice of a therapeutic strategy should be based on clinical form of the dermatosis in question, patient's age, dynamics of vitiligo progression and on the severity and extent of the spots. It is also necessary to educate the parents and the child (if any appropriate for this age), and, if necessary, psychological treatment [1].

The methods of treating vitiligo include:

- Topical treatment: glucocorticoid preparations are the first-line drugs. They are particularly effective in relation to small foci the surface, but have side effects such as thinning of the skin,

telangiectasia or stretch marks [12]. Inhibitors have also found use in the treatment of vitiligo calcineurins (tacrolimus and pimecrolimus). They are recommended primarily as an alternative for glucocorticoid preparations, mainly in the area of the face and neck [13]. Promising the method may also be therapy with the use of ruxolitinib, which is an inhibitor JAK Janus kinase. In a study by Rothstein et al. of the above-mentioned preparation for 20 weeks led to an average improvement of 23% (calculating from using Vitiligo Area Scoring Index) in 12 patients participating in the project [14].

- Phototherapy: its action is based on the immunosuppressive effects of UV radiation enhances the development and migration of melanocytes. It provides a satisfactory effect for the majority patients with early diagnosed vitiligo. The healing effects are observed however late (on average after 6 months of regular phototherapy), so encouraging is important patients and their parents to systematically participate in therapy [15]. In a child, the method of narrowband phototherapy, which uses UVB, has become the choice. Treatment is carried out 2- 3 times per week. It has been shown that a 12-month treatment with UVB in sessions 5-10 minutes twice a week allowed for over 75% re-pigmentation in 53% pediatric patients [16].

- Laser therapy: the laser has a stimulating effect by emitting a beam of UVB radiation melanocytes. The greatest effectiveness was demonstrated in the case of vitiligo outbreaks less than 30% of the body surface [2]. The discussed method is characterized by high effectiveness when it is used twice a week for a minimum of 12 weeks [1].

- Methods of surgical treatment: surgical procedures are used mainly in treatment of the segmental form and the reduced form of vitiligo. It is essential earlier evaluation of the spots and exclusion of their enlargement, as well as exclusion the aforementioned Koebner phenomenon. The z-test can be used for this assessment minigraft: when re-pigmentation is found within 4-5 minigrafts, we can state stability of the vitiligo lesions, which entitle the patient to perform the procedure. The basis of treatment surgical procedures are transplants with the use of various types of substrate, such as melanocytes culture or a suspension of living cells from the basal layer of the epidermis. Treatment Vitiligo by surgical methods is highly effective, but it requires strict selection of patients and a correctly selected method [17].

- Psychological therapy: due to the previously mentioned exposure to stigma, patients with vitiligo should have easy access to psychological care or psychiatric. The condition of the patient's social and emotional functioning is impaired it has a significant impact on the psychological development of a child, so the possible one should not be underestimated the need to introduce psychological therapy during the treatment of the child in question dermatosis [18].

Summary

A child struggling with vitiligo requires the entire diagnostic proces and interdisciplinary therapeutic care. Due to its multifactorial nature, multiforme and a wide range of available treatment methods, cooperating physician with children suffering from the dermatosis in question, as well as with their parents, it must show they have a wide knowledge of both vitiligo and possible diseases coexisting. He should also be aware of the need to work with specialists in other fields when the scope of care for a given patient exceeds his

professional skills. It is especially important to cooperate with psychologists or psychiatrists due to frequently co-occurring mood disorders.

During the diagnostic procedure it is important to remember that the basis for the correct diagnosis of vitiligo is a physical examination in which the correct technique of the examination by a doctor is particularly important. You shouldn't forget about the need to check each area of the patient's skin, as well as about diagnostics towards possible comorbidities. Once you've diagnosed vitiligo, it is essential its correct classification, due to the importance of this procedure during choosing the appropriate therapeutic strategy.

Therapeutic outcomes remain unsatisfactory, despite the high variability available methods. Keep in mind that the choice of treatment strategy should be adjusted individually for each patient. Due to the presence of promising descriptive studies the effectiveness of new therapeutic methods, it is important to conduct further research on vitiligo, which could lead to the development of therapies in the future leading to a full recovery.

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