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The latest reports in the field of diagnostics and treatment of people suffering from vitiligo interdisciplinary care, including psychological care, is necessary regardless of age

Najnowsze doniesienia z zakresu diagnostyki i leczenia osób cierpiących na bielactwo – opieka interdyscyplinarna, w tym psychologiczna, jest niezbędna niezależnie od wieku

Jakub Husejko, Hanna Bednarek, Anna Górka, Kornelia Kędziora-Kornatowska

Department of Geriatrics, Ludwik Rydygier Collegium Medicum in Bydgoszcz Nicolaus Copernicus University in Toruń

Abstract

Despite the fact that the pathogenesis of viltigo has not been fully understood yet, the course of the disease is also difficult to project and the treatment is not fully satisfactory. The illness affects up to 2% of the world's population and it is worth taking a closer look at this disease look at patients suffering from it in a holistic way. Particular attention should be paid to the mental state of patients, because many feel stigmatized by the society and even 55% of patients with the concerned disease are depressed. The result is a significantly reduced quality of daily life. Vitiligo itself is not a serious medical hazard to the patient, but comorbidities such as Addison's disease, Hashimoto's disease, type I diabetes or psoriasis can lead to serious consequences if left untreated. With the diagnosis of this vitiligo, patients should be diagnosed for these diseases. Vitiligo can last for many years or progress quickly as well as disappear on its own. A physical examination – extended, in case of doubt, by a biopsy is the basis of the diagnosis. Depending on the clinical form, a patient's age, the dynamics of the disease development and the quantity of the changes, the form of therapy is selected. However, this issue is still a big challenge because, as we have mentioned, none of the available treatments guarantee effectiveness. Of the available therapeutic methods, the most satisfactory results are achieved by phototherapy and laser therapy used regularly for 12 months. (Gerontol Pol 2020; 28; 223-227)

Keywords: *vitiligo, dermatosis, exclusion, interdisciplinarity*

Streszczenie

Mimo, iż patogeneza bielactwa nie jest w pełni poznana, przebieg choroby również jest trudny do określenia, a leczenie nie jest w pełni satysfakcjonujące, to dotyczy nawet do 2% populacji świata i warto przyjrzeć się tej chorobie jeszcze raz - spojrzeć na chorych dotkniętych tą chorobą w sposób holistyczny. Należy zwrócić szczególną uwagę na stan psychiczny pacjentów, gdyż wielu z nich czuje się stygmatyzowanych przez społeczeństwo a nawet 55% pacjentów z omawianą chorobą dotkniętych jest depresją. Skutkiem jest znacznie obniżona jakość życia codziennego. Bielactwo samo w sobie nie jest poważnym zagrożeniem zdrowotnym dla pacjenta, ale choroby współistniejące – głównie autoimmunologiczne, takie jak choroba Addisona, choroba Hashimoto, cukrzyca typu I, łuszczyca, nieleczone mogą prowadzić do poważnych konsekwencji. Wraz z rozpoznaniem tej bielactwa należy diagnozować pacjentów w kierunku tychże chorób. Bielactwo może trwać wiele lat lub szybko postępować jak i samoistnie ustąpić. Podstawą rozpoznania jest badanie przedmiotowe poszerzone, w przypadku wątpliwości, o biopsję. W zależności od postaci klinicznej, wieku pacjenta, dynamiki rozwoju choroby oraz wielkości zmian wybierana jest forma terapii – jednak ta kwestia pozostaje nadal dużym wyzwaniem gdyż, jak wspomniano, żadna z dostępnych nie daje gwarancji skuteczności .Fototerapia i laseroterapia stosowane regularnie przez 12 miesięcy przynoszą najbardziej zadowalające efekty z dostępnych metod terapeutycznych. (Gerontol Pol 2020; 28; 223-227)

Słowa kluczowe: *bielactwo, dermatoza, wykluczenie, interdysyplinarność*

Correspondence address: Jakub Husejko; Department of Geriatrics, Ludwik Rydygier Collegium Medicum in Bydgoszcz, 9 Skłodowskiej-Curie St.; 85-094 Bygdoszcz ☎ (+48) 725 465 576 kubahusejko@gmail.com

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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 in sun-exposed areas of the skin, which is more noticeable in dark-skinned people. Changes can 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 women and men. 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, and 30% of them run in families [2].

Vitiligo, although not a life-threatening disease, is a dermatosis that can have serious psychological and social consequences. 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 changes often affect exposed parts of the body. This image is particularly noticeable in people with dark complexion, in whom the contrast between healthy and diseased skin is particularly noticeable. According to the available data, even 55% of patients suffering from vitiligo are depressed, which should be taken into account by health care professionals who treat these people [3].

Materials and methods

The authors reviewed available research over the past 30 years (1990-2020) using leading electronic databases and search engines, such as Medline, ResearchGate, and Google Scholar. Keywords were used such as vitiligo, dermatosis, exclusion or interdisciplinarity. Among the available materials, there were chosen the ones in which the current diagnostic and therapeutic knowledge of vitiligo were characterized, with particular emphasis on the need for interdisciplined treatment, along with psychological support

Results

Etiopathogenesis

Vitiligo is a disease with an incompletely explained pathogenesis, characterised by multifactoriality and polygyny . 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 a more frequent coexistence of vitiligo with other autoimmune diseases, including Addison's disease, uveitis, retinitis, Hashimoto's disease, type I diabetes and psoriasis [4]. This theory is also supported by the higher prevalence of antibodies to melanocytes, as well as the presence of a cellular immune response mediated by CD 8+ T cells, which can induce the destruction of melanocytes [5].

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

– Neural theory: it involves the destruction of melanocytes by releasing cytotoxic mediators from the cutaneous nerve endings. The basis of this theory was the finding of a higher concentration of catecholamines or vanillic acid in urine [7].

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

A clinical picture of a person with vitiligo

Discoloration spots, well separated from healthy skin are characteristic of vitiligo. The spots are white, round or oval in shape and up to several centimeters in size. There is a division of vitiligo into a segmental and non-segmental form.

At an earlier age, the segmental form is more common, characterized by the presence of one or more spots confined to one half of the body. In this form of the disease, progression is rapid [8]. At a later age, the non-segmental form is more common, consisting of two types: the focal form (one or more spots of limited localization that do not meet the criteria of the segmental form) and the generalized form (occupying a larger part of the body than the focal form). The generalized form is

divided into two subtypes: the face and limb form, and the total form of vitiligo (a rare form covering over 90% of the body surface) [1]. Bilateral vitiligo appears more frequently in older patients and is more closely related to the

autoimmune origin of the disease. [9].

The discussed dermatosis usually does not cause any discomfort, but there are cases with pruritus – most often along with inflammation on the periphery of vitiligo spots [10]. The Koebner phenomenon is also interesting and worth noting, which consists in the appearance of new changes at the site of injuries (such as burns or abrasions). This phenomenon occurs even in 20-60% of vitiligo patients [1]. Due to the frequent stigmatization of people suffering from vitiligo, the clinical picture should also include the occurrence of depression and other mood disorders [4].

Vitiligo has an unpredictable course of the disease: it can last for many years and be rapidly progressive. The disease usually lasts for many years, but it may also have a tendency to spontaneously resolve [11].

Although there are no significant differences in the clinical course of the disease in terms of age and sex, there are slight differences in the correlation of the skin phototype with the age of vitiligo diagnosis and the areas in which the first changes occur. In children (0-16 years), the disease is more commonly diagnosed in those with skin phototype 2 (light skin color), while in adults (>16 years of age) in people with skin phototype 3 (creamy skin color). The first changes observed in patients are most often found on the face – in children, and on the upper limbs in adults [12].

In the case of the presence of anti-TG and anti-TPO antibodies, their number is significantly lower in adults and children diagnosed with the disease already in childhood than in adults whose onset of the disease occurred in adulthood [13].

Diagnostics

Physical examination is the basis for diagnosis of vitiligo. If in doubt, a skin biopsy may be performed for histopathological examination. The discussed dermatosis will be indicated by the loss of pigment cells in the dermis and epidermis, keratinocyte hydropic degeneration or inflammatory infiltration of T-lymphocytes on the periphery of the lesions [11]. To assess the extent of disease foci, examination with the use of a Wood's lamp may be helpful [14]. It is also important to remember about the frequent occurrence of comorbidities (mentioned earlier in the discussion of the autoimmune theory), therefore it is important to conduct a comprehensive medical history and physical examination of these disease entities, and in case of further suspicion, order additional tests (e.g. blood count or blood count). thyroid hormones) [1].

The differential diagnosis should include the following diseases: mycosis, tinea versicolor, white dandruff, discoloration marks, skin depigmentation during the use of glucocorticosteroids, post-inflammatory depigmentation, mycosis fungoides, second-order syphilis, drug-induced lesions, Ito hypomelanosis, nodular sclerosis, piebaldism, scleroderma, Addison's disease or leprosy [1].

Treatment

Treatment of vitiligo is often challenging as none of the treatments available today can guarantee effectiveness. The choice of a therapeutic strategy should be based on the clinical form of the dermatosis, the patient's age, the dynamics of vitiligo progression, and the severity and extent of the spots. Patients' education and, if necessary, psychological treatment are also essential [1].

The methods of treating vitiligo include:

- **Topical treatment:** glucocorticoid preparations are the first-line drugs. They are particularly effective in relation to foci that occupy a small area, but they cause side effects, such as skin thinning, telangiectasia or stretch marks [15]. Calcineurin inhibitors (tacrolimus and pimecrolimus) have also found their application in the treatment of vitiligo. They are recommended primarily as an alternative to glucocorticoid preparations, mainly in the area of the face and neck [16]. Therapy with ruxolitinib, a JAK inhibitor of Janus kinase, may also be a promising method. In a study by Rothstein et al., the use of the above-mentioned preparation for 20 weeks led to an average improvement of 23% (using the Vitiligo Area Scoring Index) in 12 patients participating in the project [17].
- **Phototherapy:** its action is based on the immunosuppressive effect of UV radiation, which enhances the development and migration of melanocytes. It provides a satisfactory effect in most patients with vitiligo diagnosed early. However, the therapeutic effects are observed late (on average after 6 months of regular phototherapy), therefore it is important to encourage patients and their parents to systematically participate in the therapy [18]. Narrowband phototherapy, which uses UVB, has become the method of choice. Treatment is carried out 2-3 times a week. It has been shown that a 12-month treatment with UVB in 5-10 minutes sessions twice a week resulted in over 75% re-pigmentation in 53% of patients [19].

- **Laser therapy:** the laser, emitting a beam of UVB radiation, stimulates the melanocytes. The highest effectiveness was demonstrated for the vitiligo foci covering less than 30% of the body surface [2]. The discussed method is highly effective when it is used twice a week for at least 12 weeks [1].
- **Surgical treatment methods:** surgical procedures are used mainly in the treatment of the segmental form and the limited form of vitiligo. It is necessary to assess the spots earlier and exclude their enlargement, as well as exclude the aforementioned Koebner phenomenon. For this evaluation, the minigraft test can be used: when re-pigmentation is found within 4-5 minigraphs, we can determine the stability of the vitiligo lesions, which entitle the patient to perform the procedure. The basis of surgical treatment are transplants with the use of various types of substrate, such as cultured melanocytes or a suspension of living cells from the basal layer of the epidermis. Treatment of vitiligo with surgical methods is highly effective, but it requires a strict selection of patients and a properly selected method [20].
- **Psychological therapy:** due to the aforementioned exposure to stigma, patients with vitiligo should have easy access to psychological or psychiatric care. The state of social and emotional impairment of the patient's functioning has a large impact on the psychological condition, therefore the possible need to introduce psychological therapy during the treatment of people with the dermatosis in question should not be underestimated [21].

Conclusions

A person struggling with vitiligo requires interdisciplinary care during the entire diagnostic and therapeutic process. Due to its multifactorial nature, multiformity and a wide range of available treatment methods, a doctor working with children suffering from the dermatosis in question, as well as with their parents, must have extensive knowledge both in the field of vitiligo and possible comorbidities. They should also be aware of the need to cooperate with specialists in other fields when the scope of care for a given patient exceeds his / her professional skills. Cooperation with psychologists or psychiatrists is especially important due to the often co-occurring mood disorders.

During the diagnostic procedure, it should be remembered 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. One should not forget about the necessity to check each area of the patient's skin, as well as to diagnose any coexisting diseases. After the diagnosis of vitiligo, it is necessary to correctly classify it, due to the importance of this procedure when choosing the appropriate therapeutic strategy.

The therapeutic results remain disappointing despite the wide variety of methods available. It should be remembered that the choice of treatment strategy should be individually tailored to each patient. Due to the presence of promising studies describing the effectiveness of new therapeutic methods, it is important to conduct further research on vitiligo, which could lead to the development of a treatment that leads to a full cure.

Conflict of interest
None

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