

Assessment of suicidal behavior in dermatology (Review)

ANA MARIA ALEXANDRA STANESCU¹, ALEXANDRA TOTAN¹, DANIELA MIRCESCU¹,
SMARANDA DIACONESCU², OVIDIU GABRIEL BRATU^{1,3}, LÁSZLÓ FEKETE⁴, GYULA LÁSZLÓ FEKETE⁵,
DANIEL BODA⁶ and CAMELIA CRISTINA DIACONU^{1,7}

¹University of Medicine and Pharmacy 'Carol Davila', 050474 Bucharest; ²II Pediatric Surgery Clinic, 'St. Mary' Children Emergency Hospital, 700309 Iasi; ³Urology Department, Emergency University Central Military Hospital, 010825 Bucharest; ⁴CMI Dermamed, 530540 Targu Mures; ⁵University of Medicine and Pharmacy, Dermatology Clinic, 530136 Targu Mures; ⁶University of Medicine and Pharmacy 'Carol Davila', Department of Dermatology, 050474 Bucharest; ⁷Clinical Emergency Hospital of Bucharest, 020322 Bucharest, Romania

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Abstract. Many diseases that affect physical health can also affect mental health. Many of these diseases are studied in terms of quality of life, depression and suicidal behavior. Dermatological disorders, although having a strong impact on the individual's life, are less studied with regard to suicidal behavior. There is a need to approach several dermatological diseases from the perspective of suicidal behavior in order to intervene early with specific treatment or to prevent suicide. Psoriasis, acne, melanoma, atopic dermatitis and urticaria are scarcely studied from the point of view of suicidal behavior. In addition to these diseases, there are others that require attention in terms of suicidal behavior, such as vitiligo or oculocutaneous albinism, most probably due to a small number of people suffering from these diseases, research is almost non-existent in these cases. We want to draw attention to the importance of early detection of suicidal behavior in dermatological practice and to highlight the need for several studies on this subject.

Contents

1. Introduction
2. Suicide in dermatology
3. Aspects of suicidal risk assessment in patients with dermatological diseases
4. Dermatological conditions with increased risk of suicidal behavior
5. Conclusions

Correspondence to: Professor Camelia Cristina Diaconu, University of Medicine and Pharmacy 'Carol Davila', 8 Eroii Sanitari Street, 050474 Bucharest, Romania
E-mail: drcameliadiaconu@gmail.com

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1. Introduction

The rate of psychological co-morbidity of dermatological disorders in Europe is not known, the patient being generally treated only dermatologically and in terms of other much more studied co-morbidities. In other diseases, such as diabetes, heart disease and asthma, the presence of depression is much more widely studied than in dermatological diseases.

The World Health Organization's slogan 'There is no health without mental health' highlights the fact that mental health contributes bidirectionally to physical health (1). On the one hand, mental health can affect physical health, but also physical health can affect mental health.

European studies have shown that patients with eczema, acne, psoriasis and hidradenitis suppurativa pose an increased risk of depression (2-4).

Although a less approached topic, suicide is encountered even in dermatology. The risk of suicide may be preexisting, may occur as a complication of skin disorders or can be triggered by drugs such as interferon. The risk of suicidal behavior can be an important factor in the general management of the dermatological patient. Patients at risk should be specifically asked about suicidal ideation and trends, with immediate intervention required (5). In dermatology, the risk of suicide has been described in severe congestive acne, psoriasis and metastatic melanoma (6). Patients with chronic disease or potentially fatal or severe pain may be suicidal, and patients with depression, alcohol dependence, substance abuse, schizophrenia or personality disorder are particularly at risk (7,8). With regard to suicidal psycho-dermatological diseases, increased attention should be paid to the early recognition of a possible suicide risk (Fig. 1).

2. Suicide in dermatology

Suicide refers to the action of deliberately terminating one's own life; suicidal behavior can be classified as suicidal ideation, suicidal plan, and attempted suicide. Nonsuicidal self-harm refers to deliberate destruction of bodily tissue without suicidal intent, making it difficult to distinguish between non-suicidal self-injury and attempted suicide.

Dieris-Hirche *et al* (9) conducted a study in Germany, showing that 16% of patients with atopic dermatitis had suicidal ideation, compared to the control group, of only 1%.

In another study, Dalgard *et al* (10) observed a significantly higher prevalence of clinical depression in dermatological disorders, 10.1% vs. control 4.3%, anxiety disorder 17.2% vs. control 11.1%, and suicidal ideation 12.7% vs. control of 8.3%.

Although many dermatological conditions do not endanger life, psychiatric disorders that may increase the risk of suicide should be considered due to the appearance of dermatological conditions that have a strong impact on the individual's life.

In patients with dermatological conditions, the factors associated with suicidal predisposition are psychiatric disorders, such as body dysmorphic disorder, posttraumatic stress disorder and major depressive disorder. Suicide was associated with a psychiatric disorder in 90-95% of cases, and depression is a powerful predictor of suicidal ideation (11).

Certain dermatological symptoms (auto cut, auto-induced dermatosis) may be a sign of psychiatric disorders (major depressive disorder, posttraumatic stress disorder, personality disorder) (12).

Major stressful events and mental trauma can lead to exacerbation of dermatological conditions, increasing the risk of suicidal behavior (13).

Chronic severe conditions, such as psoriasis, are associated with suicidal ideation (independent of psychiatric comorbidity) (13). Also, pruritus syndrome correlates with severe depression, increasing the risk of suicidal behavior (14). Halvorsen *et al* (15) followed the suicidal idea in 4744 adolescents, 21.2% had suicidal ideation after intense pruritus, compared with 8.4% without pruritus.

Other chronic conditions associated with dermatological conditions, such as cancer, diabetes, cardiovascular disease, are alarm signals because patients have cumulative factors that predispose to suicide (16). Insomnia (or lack of sleep due to dermatological conditions) is another important factor to be considered in the suicidal risk assessment.

Regarding the layout of injuries, permanent or long-term injuries cause great problems, especially when these occur in childhood (12). Both facial and other lesions in the visible body or in the genital areas greatly affect the quality of life.

Medications used in dermatology, such as isotretinoin, tumor necrosis factor- α inhibitors, interleukin-17 (IL-17) inhibitors may have suicidal behavior as a side effect. On the other hand, the medication of psychiatric patients can cause dermatological conditions (multiforme erythema, severe seborrheic dermatitis, lithium-induced exacerbation of psoriasis or acne) (17).

Adalimumab has been associated with suicidal ideation, attempted suicide and complete suicide (18). Of the biological therapies, infliximab and adalimumab (tumor necrosis factor- α inhibitors) have the highest rate of suicidal behavior (19). Ustekinumab (targeting IL-12 and IL-23), secukinumab (anti-IL-17 agent) and ixekizumab (anti-IL-17 agent) were not associated with increased suicidal behavior. Brodalumab (an IL-17 receptor subunit A blocker) was initially banned because of the high rate of suicides following administration, however, later on it was concluded that there was lack of data regarding a clear association with suicidal behavior (20).

Regarding isotretinoin (retinoid), studies are contradictory. On the one hand, isotretinoin has been associated with aggression, psychosis, depressive behavior and suicide, on the other hand it has been associated with a significant improvement in quality of life and depression (21,22). Monitoring depressive symptoms and suicidal thoughts in patients treated with isotretinoin should be observed, if they occur, the medication should be discontinued and a specialist counselor should be consulted (if necessary) (23). There have been reports of depression and suicidal ideation following the administration of retinitis etretinate and its metabolite acitretin (24,25).

When doxycycline is administered, it may cause suicidal behavior and corticosteroids are associated with a wide range of neuropsychotic effects (26,27).

3. Aspects of suicidal risk assessment in patients with dermatological diseases

As part of the suicide risk assessment of dermatological patients, age should be considered. In adolescents and young adults, the rate of suicide is rising, in middle-aged people there is a decline, then the rate of suicide increases in the elderly. The highest suicide rate worldwide is in people over 70 years of age and in the case of adolescents and young adults suicide is the second leading cause of death after traffic accidents (28). In the United States, the assessment of suicidal behavior in the 12-17 age group showed that 15-29% have suicidal ideation, 12.6-19% suicide plans, and 7.3-10.6% attempted suicide (11).

Women have suicide attempts 3-4 times more often than men, but men are more likely to be successful in suicidal attempts. From another point of view, patients who are unemployed, lonely, divorced or having a deceased child/husband can have suicidal behavior.

Suicidal patients usually feel relieved when asked about suicide. Any threat of suicide is a psychiatric emergency. The risk of suicide should be considered in all patients with injuries caused by self-harm. In the case of suicidal thoughts, it is necessary to find out if there is a suicide plan and the necessary means. It is also necessary to take into account the personal or family history of suicidal behavior.

4. Dermatological conditions with increased risk of suicidal behavior

Psoriasis is a chronic disease, disfiguring, marked with remissions and exacerbations. Depending on the severity, the physical appearance may be extremely marked for the patient. In addition to the numerous comorbidities associated with psoriasis, there is also major depressive disorder. Of all dermatological disorders, psoriasis has the highest incidence of suicidal behavior (28). Gupta *et al* (29) found the desire for death to be present in 9.7% of patients with psoriasis studied, and 5.5% had active suicidal ideation. Another study correlated the severity of psoriasis with depression and the suicidal ideation was present in 2.5% of patients with moderate psoriasis and 7.2% of patients with severe psoriasis (30). Numerous other studies have confirmed both the presence of depression and suicidal ideation in patients with psoriasis, and their association with the severity of psoriasis. Along with the increase in psoriasis severity, increased years

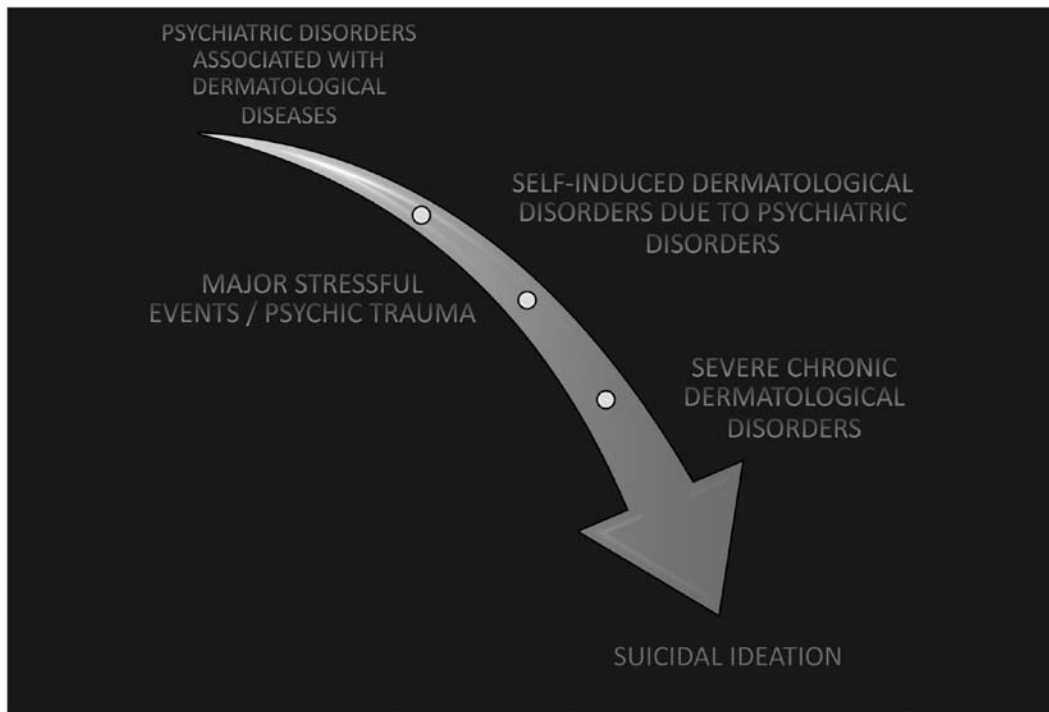


Figure 1. Influences of suicidal ideation.

of illness, poor treatment completeness, but also depending on the area of the affected body, increase the risk of suicidal behavior.

Acne affects mainly adolescents, with a higher degree of suicidal behavior (31,32). Acne can be associated with isolation and difficulty in interpersonal relationships. The presence of scars, the shape and severity of acne contribute to suicidal behavior. A survey conducted in New Zealand on 9,567 young people reported the presence of suicidal ideation in 22.5% and attempted suicide in 5.2%; interviewing only young people with acne, they reported 39.9% suicidal ideation and 12.9% attempted suicide (33). In women, more than in men, the presence of acne increases the risk of major depression, with major depression contributing to the suicide rate (34).

Melanoma is a challenge for both the doctor and the patient. Lu *et al* (35), in a cohort study in Sweden that included 12,669 people, recorded 22 suicides and 136 suicide attempts, with a relative risk of suicidal behavior after diagnosis of cancer of 1.6 (95% CI, 1.4-1.9).

Atopic dermatitis falls into suicide risk dermatological diseases. In the spring, exacerbation of atopic conditions may increase the risk of suicide (36,37). Halvorsen *et al* (38) reported the presence of suicidal ideation in 15.5% of those studied with dermatitis vs. 9.1% of those who did not have dermatitis. A study in Japan reported the presence of suicidal ideation in the case of atopic dermatitis, in the mild form of 0.21%, in the moderate form of 6% and in the severe form of 19.6%, all three forms having a higher predisposition to female sex (39). In atopic dermatitis, pruritus and lack of sleep are correlated with depression. In addition to the patients with atopic dermatitis, the family also suffers, and parents of children with atopic dermatitis (depending on the severity of dermatitis) have thoughts of sacrificing their child

or themselves reported as 0.11% in parents of children with mild dermatitis, 0.35% in parents of children with moderate dermatitis, and 3.28% in parents of children with severe dermatitis (39,40).

Urticaria has a duration of less than 24 h, but chronic urticaria lasts more than 6 weeks. Urticaria is a traumatic and stressful event, that can be associated with suicidal behavior. The suicidal ideation among patients with chronic urticaria was reported as 6.3-18.8% (41,42).

5. Conclusions

In practice, the psychological or psychiatric impairment of patients with dermatological conditions should not be neglected. Dermatological disorders are often associated with psychiatric disorders, requiring a specific approach to these patients by the dermatologist, and, if necessary, a multidisciplinary team need to be formed, including a psychiatrist. A complex approach is needed to estimate suicidal behavior. Suicidal behavior may be a psychiatric emergency, in some cases requiring immediate treatment.

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Availability of data and materials

The datasets used and/or analyzed in the article are available from the corresponding author on reasonable request.

Authors' contributions

AMAS, AT, DM, SD, LF and GLF collected, analyzed and interpreted the patient data regarding the risk of suicide in dermatology. AMAS, OGB, DB and CCD made substantial contributions to the conception of the study and interpretation of data; also, they drafted the manuscript and were major contributors in writing the manuscript. All authors read and approved the final manuscript.

Ethics approval and consent to participate

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Competing interests

The authors declare that they have no competing interests.

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