# Somatic and non-somatic problems connected with psoriasis in pregnancy

## Somatyczne i pozasomatyczne problemy związane z łuszczycą w ciąży

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### Abstract

*Hormonal, metabolic and immunological changes occurring during pregnancy have significant effects on the function of the skin. Psoriasis is one of the most common dermatological diseases and it is known as a nonspecific dermatosis in pregnancy.*

*The aim of this article is to present the importance of support in the course of psoriasis in pregnant women. Psoriasis may cause recurrent miscarriages, chronic hypertension, diabetes or obesity, leading to perinatal complications and premature birth. The coexistence of psoriasis and pregnancy requires emotional prophylaxis, as well as support and psychotherapeutic care. Medical staff requires knowledge of skin diseases and skills to assess a patient's mental state.*

Key words: **psychosocial support** / **psoriasis** / **pregnancy** /

### Streszczenie

*Zmiany hormonalne, metaboliczne oraz immunologiczne występujące w okresie ciąży w istotny sposób wpływają na funkcjonowanie skóry. Łuszczyca należy do najczęstszych schorzeń dermatologicznych i zaliczana jest do nieswoistych dermatoz okresu ciąży.*

*Celem artykułu jest przedstawienie znaczenia wsparcia w przebiegu łuszczycy u kobiet ciężarnych. Ciąża w różny sposób wpływa na przebieg łuszczycy. Łuszczyca może powodować wystąpienie nawracających poronień, przewlekłego nadciśnienia tętniczego, cukrzycy, otyłości prowadząc do wystąpienia powikłań okołoporodowych i porodu przedwczesnego. W sytuacji stwierdzenia współistnienia łuszczycy w ciąży konieczne jest wdrożenie profilaktyki w sferze emocjonalnej i objęcie ciężarnych wsparciem i opieką psychoterapeutyczną. Wspieranie ciężarnej z łuszczycą wymaga od personelu medycznego umiejętności oceny stanu psychicznego kobiety oraz wiedzy w zakresie chorób skóry.*

Słowa kluczowe: **wsparcie psychologiczne** / **łuszczyca** / **ciąża** /

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## Admission

Although pregnancy is a physiological phenomenon, it is nevertheless a time of difficult and psychological biological adaptation. Hormonal, metabolic and immunological changes occurring in pregnancy have significant effects on the function of the skin. Psoriasis is one of the most common dermatological diseases and belongs to the group of nonspecific dermatoses of pregnancy. Numerous studies on the negative influence of psoriasis in the course of pregnancy confirm that pregnant women need adequate support system. A high level of support significantly decreases stress and anxiety, limiting the number of medical complications in pregnancy, and has a positive influence on patient well-being. Identification of quantitative and qualitative requirements and the source of support is important in order to develop a holistic model of care for pregnant women with psoriasis [1, 2, 3, 4].

## The aim

The aim of this article is to present the importance of support for pregnant patients with psoriasis.

## Characteristic of psoriasis

Psoriasis is classified as one of the most severe dermatological diseases. It is a noninfectious, chronic, inflammatory skin disease of complex etiopathogenesis. Approximately 1-3% of the European and American population suffer from psoriasis, with about one million people affected in Poland alone [5, 6, 7, 8].

Although psoriasis does not endanger the lives of patients, it may cause incapacity for work and lead to mental and physical disabilities. Psoriasis treatment does not eliminate the disease permanently and only leads to remission [1, 9, 10].

This disease is characterized by a variable clinical picture. Lesions can be limited to the most typical areas of the body or occupy the whole surface of the skin and/or affect the joints. Two types of psoriasis are known: type 1 – with onset before the age of 40 and a more severe clinical picture, type 2 – with onset after 40 years of age and a mild course of the disease [11].

A burdensome topical treatment, as well as many methods of systemic treatment are used, but each of them has its limitations and the risk of potential complications [10, 12].

Numerous external and internal factors such as stress, changes in hormone levels mainly in pregnancy, menopause, trauma, infections, sun radiation and drugs, influence the clinical picture of psoriasis [13].

## Pregnancy and psoriasis

Sex hormones (estrogens, progesterone and androgens), have a biological and immunological impact on the skin pathophysiology, so pregnancy influences the natural course of psoriasis [13].

Pregnancy affects the course of psoriasis in various ways. The literature shows that reduction of symptoms is observed in about 30-40% of women, aggravation of symptoms in about 10-25% of pregnancies and no change is reported in about 20% of cases [5, 14, 15, 16].

Raychaudhuri et al., reported an improvement in psoriasis in 55-56% of female patients, a deterioration in 23-26% of women, and no effect in 18-21%. In another study by Mowad et al., an improvement was noted only in 4% of pregnant women, while in 41% of cases the pregnancy had a negative impact on the skin condition [17, 18].

Immunological changes with a predominance of the humoral response (Th2), the production of blocking antibodies and physiologically increased levels of progesterone and estrogens are the main factors that may affect the course of psoriasis in pregnancy and that are also necessary to maintain the pregnancy [11].

In pregnancy, Th1-dependent diseases such as psoriasis may be improving due to an increase in the participation of Th2 cells compared to Th1, resulting in an increased synthesis of interleukins Th2 (IL-4, IL-5, IL-6, IL-9, IL-10, IL-13) and reduction in the level of interleukins Th1 (IL-2, IL-12, TNF-α, IFN-α).

Therefore, changes in the immune status during pregnancy weaken the Th1-dependent process of psoriasis. In recent years, a significant role of lymphocytes Th17 in the course of psoriasis has been reported. A recent study of Saito et al., reported a reduction of Th1 and Th17 cells in the course of a physiological pregnancy. The results demonstrate a significant role of Th17 cells in the maintenance of pregnancy. In cases when the level of Th17 cells in peripheral blood is stable or slightly elevated, and rises in the uterus, a miscarriage may occur [19]. There are also hypotheses which suggest human placental lactogen and human chorionic gonadotropin to play a role in the immunosuppressive effect of the fetus and the placenta on the deficiency system of a pregnant woman [15, 18, 19, 20].

The effect of high levels of estriol and progesterone during pregnancy on the course of the disease is also crucial. Estrogen reduces the number of neutrophils and Th1 cells, and the synthesis of chemokines by keratinocytes. The production of inflammatory IL-12 and TNF-α is inhibited while the production of anti-inflammatory IL-10 is increased. Progesterone stimulates Th2 cells to synthesize IL-4 and IL-5 and the transferring protein (blocking factor), what has a positive effect on the increase of Th2 cytokines production by peripheral blood lymphocytes of a pregnant woman. As a result, reduced NK cell activity and increased Th2-mediated immune response are observed [21, 22].

On the other hand, psoriasis can cause recurrent miscarriages, chronic hypertension, diabetes or obesity, leading to perinatal complications and premature birth.

Pregnancy also predisposes to impetigo herpetiformis (a rare type of pustular psoriasis) – a severe and life-threatening illness, in which the skin lesions are accompanied by systemic symptoms and abnormal laboratory results - fever, leukocytosis, hypocalcemia, or symptoms of heart failure. Impetigo herpetiformis is the most common in the second trimester of pregnancy and can lead to fetal death or preterm delivery [14, 23].

Treatment of psoriasis in pregnancy is individualized, taking into account the extent and severity of the disease, the benefits of therapy and the potential risk for the mother and the fetus. Emollients and weak to moderately strong corticosteroids are used. UVB therapy is allowed in case of diffuse lesions [11].

## Social support of pregnant women with psoriasis

Psychological factors greatly influence the eruption and the course of psoriasis. Aggravation of psoriatic lesions is observed in situations of psychological and physiological stress [24, 25].

Contemporary definition of psychological stress claims it involves external factors and the resulting consequences, the internal factors: anxiety, emotional tension. Physiological stress is a series of reactions and chemical processes whose excess is harmful to health [26,27].

Pregnancy causes psychological stress, being associated with frustration, and leads to a number of internal conflicts. It is a source of individual and social pressures. It is a period of physical stress associated with changes taking place within the endocrine, immune and nervous systems. Pregnancy can change self-perception and cause lack of acceptance of the changing appearance what, accompanied by psoriatic lesions on the exposed parts of the body or the genitals, may increase discomfort and lower the mood [28, 29].

Psoriasis in pregnancy can cause many diseases that lead to perinatal complications and premature births [14].

Pregnancy and the associated mental and physical burden for the patient, as well as the coexistence of psoriasis which may cause complications and symptoms such as itching, lead to high levels of stress and call for support and psychoprevention [25].

Support is a multidimensional term, with the exchange of emotional support, information, tools and assets as its characteristic feature. This exchange may be unilateral or bilateral, and its direction (giver – receiver) can be fixed or variable. It is important to accurately respond to the needs of a person in a difficult situation. Support plays an key role in neutralizing the impact of negative events and other stressors by eliminating or minimizing these stressors, improving the ability to cope with stress, reducing the effect of a stressful situation after an incident. Support also lowers the level of stress, thus helping the patient to cope with a difficult situation. Perception and availability of social support during a difficult situation is a key variable modulating successful coping with stress. In order to support a pregnant patient with psoriasis, psychological evaluation of the mental abilities of the woman and knowledge of the nature of the disease are required [3, 4, 16, 28].

Any kind of support for pregnant women with psoriasis is essential: instrumental support - to better understand the course of the disease during pregnancy, informative support – to provide the necessary information about how to live with the disease during pregnancy, and evaluative and emotional support – to help relieve tension, reduce discomfort and ensure safety [16, 28].

Offering support to pregnant women with psoriasis may lead to their acquisition of skills how to deal with the disease during pregnancy and achieve higher self-esteem. It can reduce stress levels, thereby preventing adverse physiological changes in the body and the skin [25].

Psychotherapy in the treatment of psoriasis is mainly based on individual psychotherapy, group psychotherapy, meditation, relaxation techniques, autogenic training, or visualization. The techniques are aimed at reducing stress and improving the quality of life [30].

## Summary

The task of granting a pregnant psoriatic patient emotional support, information, instrumental or tangible techniques, is interdisciplinary and challenging. It requires the medical staff to be able to assess the mental status of psoriatic patients and, most importantly, to have the knowledge about the disease in pregnancy. It is important to teach pregnant women how to deal with negative emotions, and mitigate the problems occurring in the course of psoriasis in pregnancy.

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