Pregnancy-Related Psoriasis

Subjects: Others

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Psoriasis is a chronic inflammatory disease, a T cell–mediated disorder secondary to inflammation and keratinocyte hyperproliferation that affects 1–3% of the population. Its course is unpredictable and capricious but usually is associated with chronic immune-mediated findings and generalised inflammatory disease. Most forms begin before the age of 40, which corresponds with the reproductive period for most women.

Keywords: psoriasis ; pregnancy ; high-risk pregnancy ; hypertensive disorders ; gestational diabetes ; low birth weight

1. Introduction

Given that the evolution and severity of psoriasis during pregnancy cannot be predicted, optimal treatment choices need to be individualised. Pregnant women can have improved [1][2] or worsened outcomes during pregnancy, mainly because of specific immunologic adaptations during pregnancy and the lack of medication changes. Most women with more than one pregnancy who experienced improvement during earlier pregnancies report a similar response during subsequent gestations [3]. However, there are cases of a different clinical disease evolution across pregnancies and postpartum periods in the same individual [4]. Improvement during pregnancy has been reported for women who carry HLA-Cw* 0602, but women with psoriasis who do not carry this allele tend to experience unchanged or worsening disease [5]. During the postpartum period, it is common for psoriasis to worsen in the form of new skin lesions or an extension of existing lesions [6][7].

The risks of an infant developing psoriasis are 50% if both parents have psoriasis, 16% if one parent has psoriasis, and 8% if neither parent but one sibling has psoriasis [8].

The pathogenesis of psoriasis lesions is attributed to the dysfunction of T-cell subsets including T-helper (Th) 1 cells, Th2, Th17, Th22 and regulatory T cells (Tregs) and the resulting aberrant release of the corresponding cytokines including IFN-γ, tumour necrosis factor (TNF)-α, IL-23 and IL-17 family members [9][10]. The immunology of pregnancy is related to CD4+ T cell cytokines and T cell responses in autoimmune disease are influenced by pregnancy. There are immune shifts in pregnancy to facilitate maternal-fetal tolerance, the maternal immune response changes from the inflammatory Th1 cytokine pattern to the Th2 pattern [11]. Regulatory T cells (Tregs) play an essential role in immune homeostasis by suppressing immune responses. Tregs are impaired in their suppressive function in psoriasis, leading to an altered T-helper 17/Treg balance [9]. In pregnancy, the maintenance of pregnancy is related to Th2 and Th17/Th2 cells and Treg cells. Th-1-type and Th17-type cytokines that promote fetal semi-allograft rejection may compromise pregnancy, whereas Th2-type cytokines may improve pregnancy outcomes [12][13][14].

Moreover, treating pregnant women with psoriasis represents a challenge as most generally prescribed drugs are contraindicated in pregnancy because of their teratogenic effects.

2. Clinical Phenotypes of Psoriasis in Pregnancy

Psoriasis has the following clinical presentations that have been circumscribed as specific phenotypes [15].

Specific nail changes related to psoriasis nail dystrophy include the following: the presence of pitting, which is best seen under oblique lighting conditions; onycholysis (nail plate separation); oil spots (orange-yellow subungual discolouration); and dystrophic nails, similar to that observed in onychomycosis. Psoriatic nail disease occurs most commonly in patients with psoriatic arthritis.

Specific nail changes related to psoriasis can be described as nail matrix involvement which is reflected in: involvement of the proximal matrix produces pitting, Beau’s lines, nail onychomadesis leading to nail loss and trachionichia, while the involvement of the intermediate matrix is responsible for leukonychia. Involvement of the subungual tissues distal to the

lunula results in subungual hyperkeratosis, onycholysis, splinter haemorrhages or oily spots [16]. The whole nail unit may be affected by psoriasis. Nail changes are similar to those observed in onychomycosis. Psoriatic nail disease occurs most commonly in patients with psoriatic arthritis.

The Psoriasis Area and Severity Index (P.A.S.I.) score is the best-validated score used to evaluate the clinical severity of skin psoriasis [17].

3. Treatment of Psoriasis during Pregnancy

Preconception counselling and timing of conception for when psoriasis is controlled or in remission are important issues for a multidisciplinary team to address. Many authors agree that controlling disease activity prior to conception may lead to less psoriasis activity during pregnancy [4][8].

Although pregnant women cannot be included in clinical trials, information regarding psoriasis therapy, mainly during the first week of pregnancy, is available from participants who were unaware of their pregnancy and responded to questionnaires [18][19][20].

Third-line systemic therapies are indicated for severe psoriasis after the information is provided to patients about side effects for the mother and fetus. The F.D.A. classifies these drugs as class C. Systemic therapies used during pregnancy are cyclosporin, systemic corticosteroids, and TNF-alpha inhibitors.

Pregnant women cannot receive systemic treatment with methotrexate and acitretin because these drugs are teratogenic and contraindicated in pregnancy. Methotrexate may negatively affect embryogenesis and drive development of “fetal methotrexate syndrome” because it inhibits dihydrofolate reductase, an essential enzyme in D.N.A. synthesis. Methotrexate administration during pregnancy has been associated with large fontanelles, craniosynostosis, ocular hypertelorism, micrognathia, heart and limb reduction abnormalities, and developmental delay [21][22][23].

4. Biologic Treatments

The European League Against Rheumatism task force, a multidisciplinary committee with representation from 10 European countries and the United States, has suggested that the use of ustekinumab during pregnancy, based on current evidence, is not associated with an increased rate of congenital malformations [24].

Secukinumab is a fully human monoclonal antibody that selectively targets IL-17A and shows efficacy and safety in treating moderate to severe psoriasis, including psoriasis in pregnancy and postpartum. In a report by Warren et al. on 238 mothers exposed to secukinumab during pregnancy, 65% discontinued it in the first trimester, and three continued it throughout their pregnancies. In these cases, no complications of pregnancy or fetal abnormalities attributable to the medication were reported [25].

British Association of Dermatologists guidelines indicates that certolizumab pegol should be considered the first-choice treatment in pregnant women and can be used throughout pregnancy [26]. Treatment discontinuation during pregnancy is recommended in the case of secukinumab and Ustekinumab [27].

The A.C.R. 2020 guidelines [28] include a strong recommendation for biologics treatment during lactation (treatment continuation or initiation).

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