

Known history of pustular psoriasis with reactivation from in vitro fertilization therapy



Christina I. Tejada, BS,^a Vanessa Voss, MD,^b and Joann N. Salvemini, MD^b
New York and Stony Brook, New York

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INTRODUCTION

Pustular psoriasis of pregnancy (PPP) is a life-threatening condition for the mother and fetus.¹ It commonly occurs in the third trimester, resolving after delivery with possibility of recurrence in subsequent pregnancies. The pathophysiology of this disease is largely unknown, with some evidence depicting that genetic factors may influence development.² Here we report a case of PPP induced by prednisone secondary to in vitro fertilization (IVF).

CASE REPORT

A 43-year-old Filipino woman with a 15-year history of pustular psoriasis requiring 2 hospitalizations for management, presented to the clinic 16 weeks pregnant with a new-onset rapidly progressive flare after an 8-month period of remission and no therapy. During her absence, ustekinumab was discontinued for 8 months, and IVF protocol was initiated. This patient underwent a course of prednisone during IVF; she received 5 mg daily for 30 days, which was increased to 10 mg twice a day for 30 days 1 month prior to the flare. Her psoriasis was not active at the time of the prednisone administration and ensued 1 month after prednisone administration.

On presentation she had minimal involvement of her arms and breasts, and local therapy with triamcinolone and narrow-band ultraviolet B therapy was planned. Her calcium level was normal. Over the course of one week, she had impetiginized confluent erythema of both arms (Fig 1), and her trunk and legs had annular plaques with peripheral pustules (Fig 2, A and B). Her scalp had a thick plaque and she had

Abbreviations used:

PPP: pustular psoriasis of pregnancy
IVF: in vitro fertilization



Fig 1. Left arm shows confluent erythema.

generalized malaise, extremity pain, and low-grade fevers. Despite the initiation of oral clindamycin, 300 mg every 8 hours, bleach baths, and triamcinolone under occlusion, progression over 3 days led to the initiation of ustekinumab (loading dose) and a 2-week course of cyclosporine, 100 mg twice a day.

From Columbia Vagelos College of Physicians and Surgeons^a and the Department of Dermatology, Stony Brook University Hospital.^b

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Correspondence to: Christina I. Tejada, BS, 100 Haven Avenue Apt. 6B, New York, NY 10032. E-mail: cit2106@columbia.edu.

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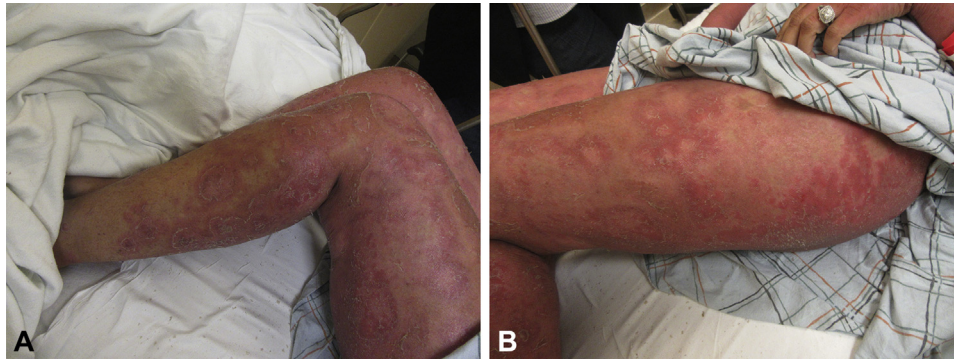


Fig 2. A and B, Legs showing annular plaques.

Blood cultures were not obtained. After 2 weeks, her disease became limited to small patches of erythema on the arms (Fig 3), her malaise and pain resolved, and she was able to return to her normal daily activities. Cyclosporine was discontinued at 19 weeks, no electrolyte abnormalities were identified, and the baby was unaffected to date. The plan is to continue ustekinumab, 45 mg alone. Both mother and baby at 39 weeks have been otherwise doing well, with no reported flares at follow-up at 5 months.

DISCUSSION

Women with autoimmune disorders are encouraged to supplement the IVF protocol with corticosteroids. It is important to note that this practice is also being broadly used for patients experiencing repeated IVF failure or recurrent miscarriages in the absence of immune disorders.

IVF protocol uses a gonadotropin-releasing hormone agonist or antagonist prior to the IVF cycle or at the time of the natural menstrual cycle.³ If prednisone is used, its dosage can be high dose (60 mg of methylprednisone for 4 days) or low dose (prednisolone 10 mg/d). There are no well-controlled clinical trial data that confirm effectiveness and safety of corticosteroids in women without immune disorders. A case-controlled study investigating combined adjuvant cotreatments with prednisolone plus low-dose aspirin and doxycycline in 970 patients showed no significant benefit for implantation or pregnancy rate.⁴

Patients with underlying psoriasis vulgaris who are exposed to aggravating factors such as pregnancy, infection and sunburn, or who take medications such as terbinafine, chloroquine, ovulation inhibitors, lithium, β -blockers, and prednisone have higher risk of generalized pustular psoriasis.^{5,6}

Pustular psoriasis of pregnancy, previously known as *impetigo herpetiformis*, is a rare dermatosis



Fig 3. Left arm shows small patches of residual erythema.

of pregnancy and has potential serious consequences for both the mother and fetus. In recent years, there has been discussion that PPP is a variant of generalized pustular psoriasis, although the classification as a variant or a distinct disease is still controversial and unclear.^{1,2} Many believe that PPP should not be considered a dermatosis of pregnancy but rather a variant of psoriasis.¹

PPP carries potential complications; the fetus has a risk of fetal anomalies, premature rupture of membranes, intrauterine growth restriction secondary to placental insufficiency, and stillbirth. The mother carries a risk of infection and sepsis.⁷ Patients can have a pre-existing personal or family history of psoriasis or can be *de novo*.

There is no specific guideline for the treatment of PPP, and the possible associated teratogenicity of the drugs needs to be considered. Treatments include corticosteroids, cyclosporine, narrow-band ultraviolet B therapy, infliximab, granulocyte and monocyte absorptive apheresis, and systemic antibiotics.¹ Corticosteroid therapy has an increased incidence of cleft palate, although if used in the third trimester it is considered a safe option.² In a study of 311 pregnancies with systemic use of glucocorticoids spanning the first trimester, there was a 64% increase in miscarriage and 2.1-fold increase in preterm

births. Another study of 66 pregnant women with autoantibodies and recurrent miscarriage administered prednisone in combination with aspirin for the duration of pregnancy showed elevated risk of hypertension, diabetes mellitus, and premature birth.⁴

Cyclosporine can be used in patients unresponsive to corticosteroids or in combination with corticosteroids. Antibiotic administration has been effective in PPP, although it cannot control the disease entirely and is used as a single agent only in mild cases. Studies on the complications of cyclosporine in gravid renal transplant patients showed a weak association with premature rupture of membranes.² The placental transfer of cyclosporine seems to be dose dependent, thus with proper monitoring it can be used as a relatively safe alternative to corticosteroids.⁵ Cyclosporine risks and benefits must be weighed, as PPP without treatment can cause fetal demise.

Here we report on a patient with a history of generalized pustular psoriasis whose coinciding pregnancy and use of prednisone likely induced a flare, which was defined as PPP. A case discussing pustular psoriasis of pregnancy secondary to

prednisone from IVF has not been described in the literature. It is important for dermatologists and gynecologists to understand the potential for pustular flare in patients with any type of psoriasis from prednisone administration during IVF.

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