Resolution of Guttate Psoriasis Plaques After One-time Administration of Guselkumab

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INTRODUCTION

Guttate psoriasis is an acute subtype of plaque psoriasis characterized by eruption of small, scaly plaques, and papules, 5 to 10 mm in size over the trunk and proximal extremities.[1] It often arises in children and young adults concomitantly with or shortly after a streptococcal throat infection or tonsillitis. Patients with chronic plaque psoriasis can also experience guttate flares following streptococcal throat infections.[1,2] Controlling guttate psoriasis with topical corticosteroids is difficult to achieve due to numerous widespread lesions. Other treatment options include phototherapy and short term use of cyclosporine or methotrexate, as guttate variants of psoriasis can remit with these treatments.[1,2] Guselkumab, an inhibitor of the p19 cytokine subunit of interleukin-23 and interleukin-39, produces dramatic resolutions of plaque psoriasis with long lasting effects.[3] This case report describes a patient with a guttate variant of plaque psoriasis that resolved after a single administration of guselkumab and continues to remain clear more than 6 months after treatment with guselkumab.

CASE REPORT

The subject was an otherwise healthy, 20-year-old female (50.3 kg and 5 feet 6 inches) who presented to dermatology clinic for initial evaluation of guttate papules on trunk and extremities and plaque-like lesions on the upper abdomen covering approximately 5% of the patient's body surface area. She had had a streptococcal throat infection 1 month prior to developing the lesions. At week 0, a prefilled syringe of 100 mg guselkumab (Tremfya, Janssen Pharmaceuticals) was administered subcutaneously. An interferon release test for tuberculosis was negative.

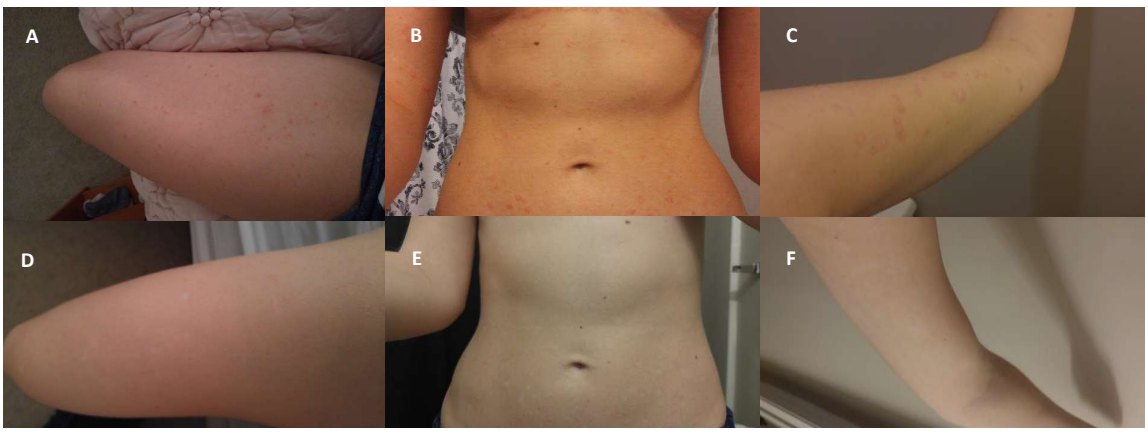
At follow-up at 10 weeks, after only 1 dose of guselkumab, there was 100% improvement of the lesions. Areas of residual hypopigmentation were present where some of the previous lesions had been located. Six months after the treatment, there was still no recurrence.

DISCUSSION

Psoriasis is driven by a complex inflammatory cascade, involving tumor necrosis factor (TNF) signaling and the IL-23/T_h17 (interleukin-23/T helper 17) pathway. T_h17 cells are distal in the inflammatory cascade, and their survival depends on IL-23.[2,3] The effectiveness of highly specific inhibitors ofTNF-α, IL-23, and IL-17 prove the importance of these signaling molecules in the pathogenesis of psoriasis.[3]

Guselkumab, an IL-23 inhibitor, is approved to treat adults (age ≥18 years) with moderate to severe plaque psoriasis who are candidates for systemic therapy or phototherapy.[4-6] Guselkumab is a human IgG1 lambda monoclonal antibody that inhibits

FIGURE 1. Resolution of guttate psoriasis plaques after one time administration of guselkumab. Top pictures (A, B, C) are before guselkumab administration; bottom pictures (D, E, F) are after one time dosing of guselkumab.



intracellular and downstream signaling of IL-23 by binding to the p19 cytokine subunit of IL-23, thereby preventing the terminal differentiation and survival of T_h17 cells.[3,4] The end result of IL-23/T_h17 pathway inhibition is prevention of the small, scaly plaques, and papules characteristic of psoriasis.

Guttate psoriasis can go into remission, allowing short term courses of phototherapy or methotrexate to be effective treatments. Guselkumab is more effective than methotrexate (guselkumab is more effective head-to-head compared to adalimumab, which is more effective than methotrexate)[4-6] and the effects of guselkumab are long lived (with almost 40% of patients maintaining 90% improvement in Psoriasis Area and Severity Index for 6 months after just 4 doses of the medication).[5] Based on that, we expected that the patient with the flare of psoriasis plaques in a guttate pattern would respond well to the treatment.

Long-term studies of guselkumab will be important for determining its efficacy and safety. We suspect one-time dosing with a potent, long acting medication like guselkumab may be a very effective, safe, and convenient way to manage acute and extensive exacerbations of psoriasis.

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