

Single Case

Severe Generalized Pustular Psoriasis Successfully Treated with Ixekizumab: A Case Report

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Keywords

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Abstract

Generalized pustular psoriasis (GPP) is a severe and potentially life-threatening type of psoriasis. We present the case of a patient with severe GPP, at first unsuccessfully treated with cyclosporine. We chose to treat the patient with ixekizumab, an anti-IL-17 antibody known for its rapid action in psoriasis vulgaris, that has also been reported as effective in GPP. The patient improved rapidly, with resolution of the active lesions after the first administration. The treatment has been continued for 2 years, with no adverse events and sustained disease control. Ixekizumab could be considered a safe and effective option in patients with GPP.

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Introduction

Generalized pustular psoriasis (GPP) is probably the most severe variant of psoriasis vulgaris and can be life-threatening [1]. Two types exist: one is associated with psoriasis vulgaris, while in the other GPP occurs as the sole phenotype. GPP can be triggered by infections, pregnancy, or drugs and is characterized by a sudden eruption of nonbacterial neutrophilic pustules that can cover the entire body surface [2]. Usually, it is accompanied by fever, leukocytosis, and high level of C-reactive protein. Recently, variants of IL36RN, CARD4, AP1S3, and MPO genes have been identified as causative genetic defects in some patients affected by GPP

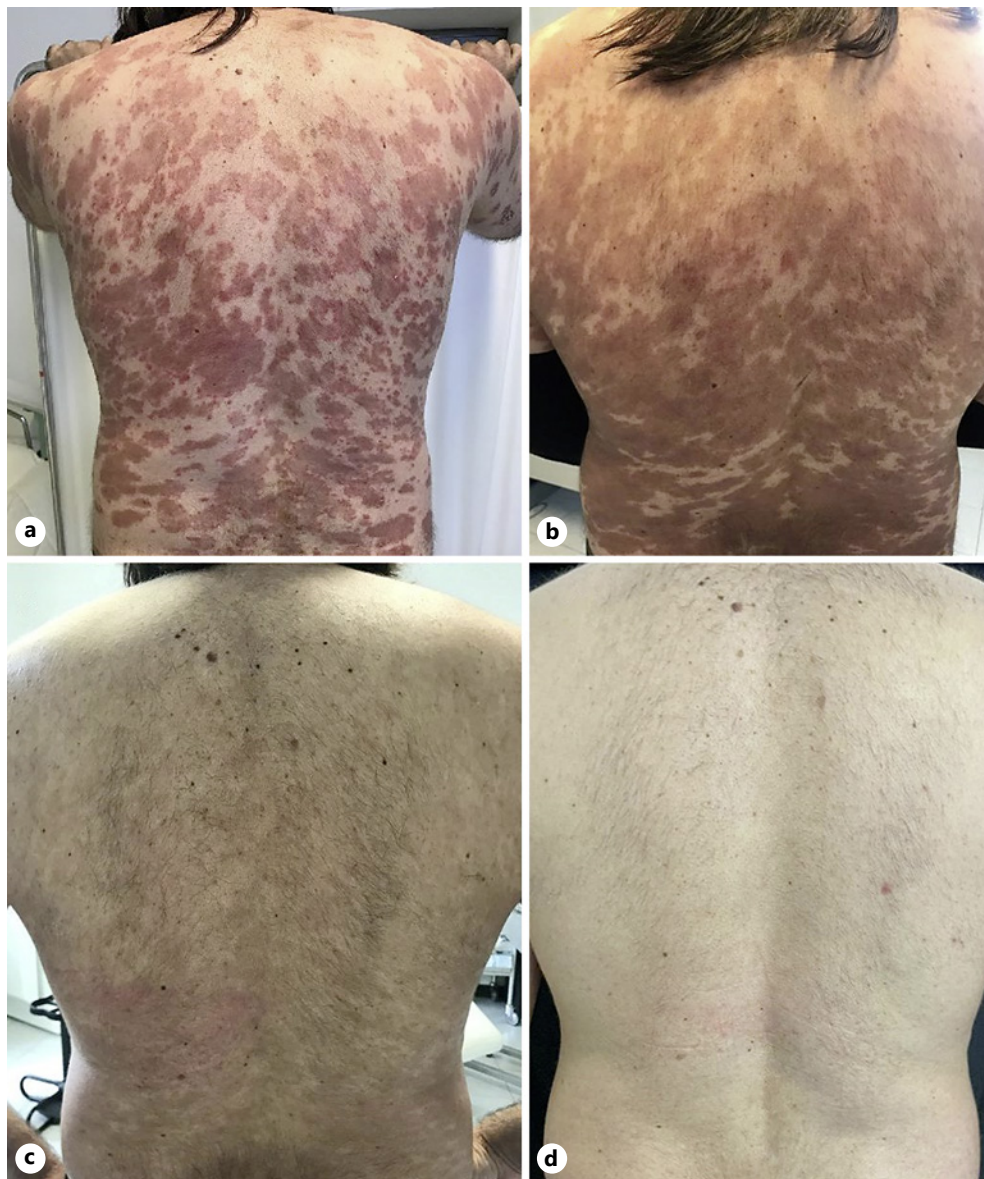


Fig. 1. Patient at first presentation (a), after the first administration of ixekizumab (b), after 1 year (c), after 2 years (d).

and spesolimab, a humanized anti-interleukin-36 receptor monoclonal antibody, is being studied for the treatment of GPP flares [3, 4]. We present the case of a 51-year-old male who was treated successfully with ixekizumab, an anti-IL-17 antibody.

Case Report

A 51-year-old man made 6 visits to the emergency room during the first wave of the COVID-19 pandemic, reporting the appearance of erythematous rash surmounted by pustules all over his body (shown in Fig. 1a). He also reported fever and malaise, and his blood test revealed levels of C-reactive protein higher than 20 mg/L and elevated white blood cell count

($36.23 \times 10^9/L$). A skin biopsy revealed psoriasiform dermatitis with neutrophils in the stratum corneum and a mild mononuclear infiltrate in the upper dermis, confirming the diagnosis of GPP.

After the first access, he was treated with cyclosporine at a dosage of 3 mg/kg/day, with no success. Due to the lack of improvement, the patient presented to the emergency room 5 more times within a short time.

Aiming to achieve remission quickly, we decided to start ixekizumab, a high-affinity monoclonal antibody that selectively targets interleukin-17A, known for its rapid action in psoriasis vulgaris [5]. The response was dramatic, and after only two injections at time 0, we observed complete resolution of the active skin lesion (shown in Fig. 1b). After 1 year the patient's psoriasis was completely in remission, as shown in Figure 1c. As of May 2022, 2 years after the first administration of ixekizumab, no adverse events have been detected and the patient is still on treatment and completely disease-free (Fig. 1d).

Discussion

GPP is an uncommon variant of psoriasis that is clinically characterized by sterile pustule formation superimposed over inflamed, erythematous skin. GPP is a potentially life-threatening condition, so diagnosing and treating it rapidly and effectively are of the utmost importance.

In 2011, the National Psoriasis Foundation (NPF) created a consensus on first- and second-line recommendations for the treatment of GPP, concluding that “treatment should be governed by the extent of involvement and severity of disease” [6]. According to the NPF, acitretin, cyclosporine, methotrexate, and infliximab are considered first-line treatments. Adalimumab, etanercept, PUVA therapy, and topical treatments are listed as second-line options.

IL-17 inhibitors have also been shown to be effective in the treatment of GPP. The first drug of this class reported as useful in GPP was secukinumab, followed by ixekizumab and brodalumab [6].

The effectiveness of an anti-IL-17 in GPP can be related to the crucial role of IL-36 (which is targeted by another monoclonal antibody, spesolimab) in the pathogenesis of the disease. It can be hypothesized that blocking IL-17A may also decrease the production of IL36 α , IL36 β , and IL36 γ by keratinocytes, preventing the accumulation of neutrophils in the dermis and the formation of the classic pustules of Kogoj [7].

Dattola in 2020 and Megna in 2021 published the first two cases of Caucasian GPP patients successfully treated with ixekizumab. They both reported a rapid action, with significant improvement or complete clearance after a few weeks [8, 9].

Our case not only confirms the rapid onset of action of ixekizumab, but also proves its excellent safety profile and long-term efficacy over a period of 2 years of follow-up. In conclusion, although broader real-world experience is needed to consolidate this observation, we believe that ixekizumab should be considered for treating GPP.

Statement of Ethics

Research complies with all ethical guidelines for human studies and animal welfare regulations. Ethical approval was not required for this study in accordance with local guidelines. Written informed consent was obtained from the patient for publication of the details of their medical case and any accompanying images.

Conflict of Interest Statement

The authors declare that they have no conflicts of interest to disclose.

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Author Contributions

Martina Burlando contributed to conception of the case report, project administration, and writing; Ilaria Salvi and Andrea Paravisi contributed to writing the manuscript; Emanuele Cozzani and Aurora Parodi contributed to manuscript revising and supervision.

Data Availability Statement

All available data used in the generation of this case report are included in the article.

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