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Scientific letter

# Rapid response to anifrolumab in refractory systemic lupus erythematosus

## Lupus eritematoso sistémico refractario con rápida respuesta a anifrolumab

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### Introduction

Systemic lupus erythematosus (SLE) is a chronic autoimmune disease characterized by immune dysregulation, inflammation, and multi-organ damage. Despite advances in treatment, many patients experience persistent disease activity and long-term organ damage, underscoring the need for more effective therapies. Anifrolumab, a monoclonal antibody targeting the type I interferon receptor alpha chain (IFNAR1), has emerged as a promising treatment by inhibiting type I interferon pathways, central to SLE pathogenesis.

This case describes a 42-year-old female with highly refractory SLE who achieved significant improvement with anifrolumab after failing multiple conventional therapies.

### Case report

A 42-year-old female diagnosed with SLE at 19 years presented with generalized cutaneous lesions and arthralgia of one-week duration. Her disease history included severe mucocutaneous involvement, alopecia, oral ulcers, pleuritis, Raynaud's phenomenon, thrombocytopenia, lymphopenia, and progressive proteinuria. Autoimmune markers, including ANA, anti-dsDNA, anti-Ro52, lupus anticoagulant, and anticardiolipin, were persistently positive, with complement consumption (low C3 and C4). She had been treated extensively with corticosteroids, hydroxychloroquine, mepacrine, methotrexate, mycophenolate mofetil, and belimumab, without sustained benefit.

She presented with a one-week history of painful, generalized cutaneous lesions and arthralgia. Physical examination revealed large, erythematous, and scaly plaques with erosions and crusts located on the face, neck, anterior trunk, back, arms, hands, and proximal legs (Fig. 1a–d). Laboratory findings included thrombocytopenia ($79 \times 10^3/\mu L$), proteinuria (304.3 mg/g), and low complement levels (C3: 65 mg/dL; C4: 12 mg/dL), indicating active disease. At baseline (Week 0), the patient presented with high disease activity, including a Systemic Lupus Erythematosus Disease Activity Index 2000 (SLEDAI-2K) score of 10, a Systemic Lupus Erythematosus Disease Activity Score (SLE-DAS) of 11.6, and a Cutaneous Lupus Erythematosus Disease Area and Severity Index Activity (CLASI-A) score of 58, reflecting significant systemic and mucocutaneous involvement.

Given the refractory nature of her SLE, treatment with anifrolumab 300 mg intravenously every four weeks was initiated alongside hydroxychloroquine (300 mg daily) and deflazacort (12 mg daily). Rapid improvement in cutaneous lesions was observed within four days, with near-complete resolution by four weeks (Fig. 1e–h). Laboratory markers normalized within weeks, including platelet count, proteinuria, and complement levels. By Week 4, she presented SLEDAI-2K of 2, a SLE-DAS of 1.34, and a CLASI-A of 8, highlighting rapid disease control.

Over five months, corticosteroids were tapered and discontinued without relapse. At 65 weeks, the patient remained in sustained remission, free from flares or treatment-related complications. At Week 65, sustained remission was achieved, with a SLEDAI-2K of 1, a SLE-DAS of 1, and a CLASI-A of 5.

### Discussion

This case highlights the efficacy of anifrolumab in achieving rapid and durable disease control in refractory SLE. The patient's prior failure to respond to corticosteroids, immunosuppressants, and belimumab underscores the challenges posed by refractory SLE. The rapid resolution of cutaneous manifestations and normalization of laboratory parameters with anifrolumab is consistent with pivotal trials such as TULIP-1 and TULIP-2, which demonstrated significant reductions in disease activity, particularly in mucocutaneous domains.

Anifrolumab's favorable safety profile further supports its use in challenging cases. In this patient, no adverse events occurred, aligning with clinical trial findings of a low incidence of serious adverse effects. Importantly, successful corticosteroid tapering and

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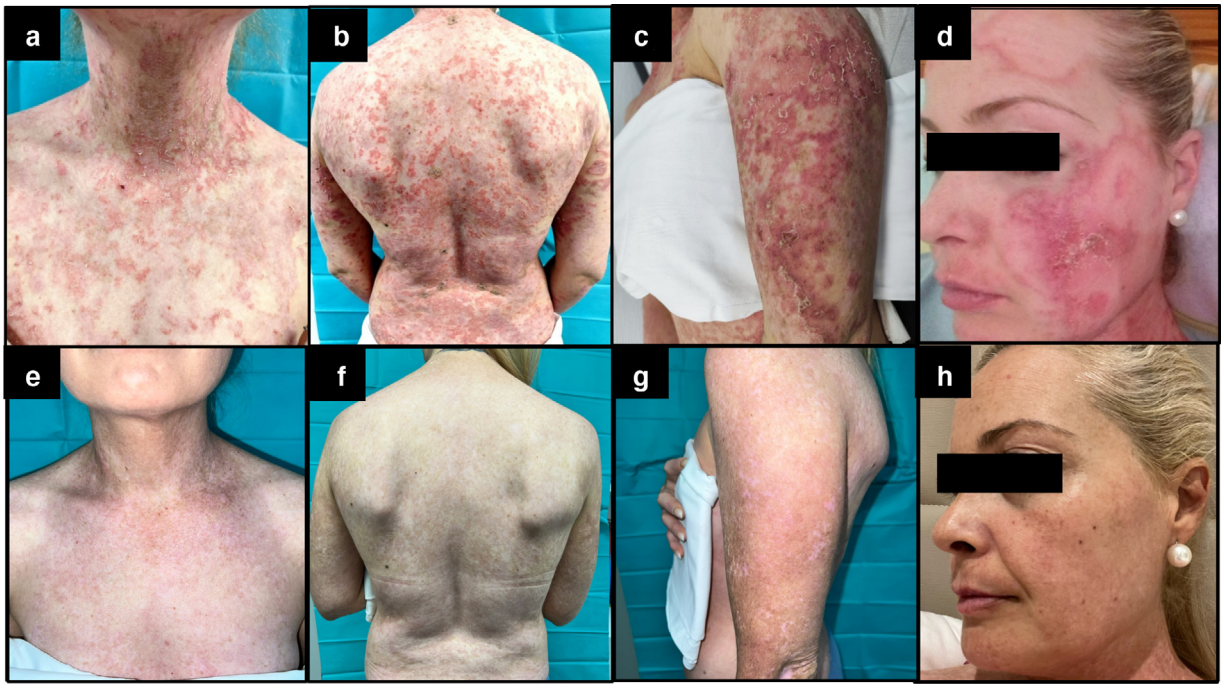


**Fig. 1.** (a–d) Erythematous-squamous plaques with generalized erosions involving the face, trunk, and extremities before anifrolumab. (e–h) Resolution of skin lesions at 4 weeks after initiating anifrolumab, with residual hyperpigmented/hypopigmented lesions remaining.

discontinuation without relapse is a milestone, given the long-term risks associated with steroid use.

By targeting the type I interferon pathway, anifrolumab offers a mechanism-based approach to disease management, addressing central pathways in SLE pathogenesis. Its efficacy in controlling mucocutaneous and hematologic complications is particularly notable, offering hope for patients with refractory disease.

This case underscores the transformative potential of anifrolumab in refractory SLE, achieving rapid, sustained remission and reducing reliance on corticosteroids. It highlights anifrolumab's pivotal role in improving outcomes and quality of life for patients with complex autoimmune disease.

## Ethical considerations

This study did not involve animal experimentation or clinical trials. Human subjects were involved, and the research was conducted in accordance with relevant ethical standards. The patient provided written informed consent for the use of images and the publication of this article. The authors confirm compliance with all applicable ethical guidelines for publication.

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## Conflict of interest

The authors declare we have no conflict of interest.