Editorial

International Journal of Clinical Rheumatology

Systemic Lupus Erythematosus (SLE): Pathogenesis, Clinical Spectrum, and Management

Nadia El-Sayed*

Department of Internal Medicine and Rheumatology, Al Noor International University, Dubai, United Arab Emirates

***Author for Correspondence:**

nadia.elsayed@aniu.ae

Received: 02-March-2025, Manuscript No. fmijcr-26-185426; **Editor assigned:** 04- March-2025, Pre- fmijcr-26-185426 (PQ); **Reviewed:** 17-March-2025, QC No. fmijcr-26-185426; **Revised:** 22-March-2025, Manuscript No. fmijcr-26-185426 (R); **Published:** 27-March-2025, **DOI:** 10.37532/1758-4272.2025.20(3).431-431

Introduction

Systemic lupus erythematosus (SLE) is a chronic, multisystem autoimmune disease characterized by the production of autoantibodies directed against nuclear and cytoplasmic antigens. The disease exhibits a relapsing–remitting course and can affect nearly any organ system. SLE predominantly affects women of reproductive age and demonstrates significant clinical heterogeneity, ranging from mild mucocutaneous involvement to life-threatening organ damage.

Pathogenesis

The development of SLE results from a complex interplay between genetic susceptibility, environmental triggers, and immune dysregulation. Variations in genes related to immune regulation and complement pathways increase disease risk. Environmental factors such as ultraviolet radiation, infections, hormonal influences, and certain medications may precipitate disease onset.

At the immunological level, impaired clearance of apoptotic cells exposes nuclear antigens to the immune system, promoting autoantibody production. B cells generate pathogenic antibodies, including anti–double-stranded DNA (anti-dsDNA) and anti-Smith antibodies. Immune complex deposition in tissues activates complement and inflammatory cascades, leading to organ damage.

Clinical Manifestations

SLE presents with diverse clinical features. Common manifestations include fatigue, fever, arthralgia, and a characteristic malar ("butterfly") rash across the cheeks. Photosensitivity, oral ulcers, and alopecia are frequent cutaneous findings.

Diagnosis is based on clinical criteria supported by laboratory findings such as positive antinuclear antibodies (ANA), anti-dsDNA antibodies, anti-Smith antibodies, and complement level abnormalities.

Management

Treatment is individualized according to disease severity and organ involvement. Hydroxychloroquine is a cornerstone therapy for most patients due to its immunomodulatory and protective effects. Corticosteroids are used for acute flares, while immunosuppressive agents such as mycophenolate mofetil, azathioprine, or cyclophosphamide are prescribed for organ-threatening disease. Biologic therapies targeting B cells and specific cytokines represent emerging therapeutic options.

Conclusion

Systemic lupus erythematosus is a complex autoimmune disease marked by immune dysregulation and multisystem involvement. Early diagnosis, vigilant monitoring, and tailored immunosuppressive therapy significantly improve prognosis. Continued advances in immunology and targeted treatments offer promising avenues for enhancing patient care and reducing disease burden.