

Increased Cardiovascular Risk after Percutaneous Coronary Intervention in Systemic Lupus Erythematosus: A Call for Vigilant Monitoring

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Letter to the Editor

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Dear Editor

Systemic Lupus Erythematosus (SLE) is a chronic autoimmune disease that continues to pose a significant global health burden. Recent estimates suggest that SLE affects approximately 3.41 million people worldwide, with a prevalence of 43.7 cases per 100,000 individuals. Cardiovascular complications remain a major concern in this population [1,2]. Notably, in a Swedish cohort of 4,192 patients with SLE, the incidence of Acute Myocardial Infarction (AMI) was 9.6 events per 1,000 person-years, compared with 4.9 events per 1,000 person-years in matched controls.

Emerging evidence suggests that patients with SLE who undergo Percutaneous Coronary Intervention (PCI) face a heightened risk of adverse cardiovascular outcomes. In a large U.S. national inpatient cohort study, SLE patients demonstrated significantly increased odds of bleeding complications following PCI, with an adjusted Odds Ratio (aOR) of 1.19 (95% CI: 1.09-1.29) compared to those without autoimmune rheumatic diseases. Another nationwide Taiwanese study identified SLE as an independent predictor of in-hospital mortality after PCI, with an adjusted odds ratio of 3.81 (95% CI: 2.02-7.16), and long-term all-cause mortality with a Hazard Ratio (HR) of 2.20 (95% CI: 1.74-2.78). Additionally, SLE was linked to a

higher risk of repeat revascularization (HR: 1.27; 95% CI: 1.02-1.58) and Major Adverse Cardiac Events (MACE) (HR: 1.47; 95% CI: 1.24-1.75) during follow-up.

Supporting these findings, a multicenter U.S. registry reported that at one year, 15.6% of SLE patients experienced myocardial infarction (vs. 4.8% in non-SLE; $p = 0.01$) and 31.3% required repeat PCI (vs. 11.8% in non-SLE; $p = 0.009$), despite similar initial procedural success [3-5]. These disparities may be driven by prothrombotic mechanisms such as antiphospholipid antibodies, elevated homocysteine, and ongoing vascular inflammation, highlighting the need for close surveillance and tailored secondary prevention strategies in this high-risk population.

In conclusion, systemic lupus erythematosus confers higher peri-procedural bleeding risk and worse one-year ischemic outcomes after PCI compared with non-SLE cohorts. Clinicians should (i) proactively stratify thrombotic and bleeding risks, including antiphospholipid antibody status, and (ii) co-manage with rheumatology to align immunosuppressive therapy and secondary prevention strategies.

Authors Contribution

AA: Conceptualised the idea, conducted the literature review, analysed and interpreted the data, and contributed to the drafting of the manuscript.

JY: Wrote the manuscript and critically revised it for important intellectual content.

VKK: Ensured the accuracy of references and final approval of the manuscript.

All authors critically revised the manuscript, approved the final version to be published, and agreed to be accountable for all aspects of the work.

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References

1. Tian J, Zhang D, Yao X, Huang Y, Lu Q. Global epidemiology of systemic lupus erythematosus: a comprehensive systematic analysis and modelling study. *Ann Rheum Dis.* 2023; 82(3): 351-356. doi: 10.1136/ard-2022-223035.
2. Tornvall P, Göransson A, Ekman J, Järnbert-Pettersson H. Myocardial Infarction in Systemic Lupus Erythematosus: Incidence and Coronary Angiography Findings. *Angiology.* 2021; 72(5): 459-464. doi: 10.1177/0003319720985337.
3. Martinez SC, Mohamed M, Potts J, Abhishek A, Roddy E, et al. Percutaneous coronary intervention outcomes in patients with rheumatoid arthritis, systemic lupus erythematosus and systemic sclerosis. *Rheumatology (Oxford).* 2020; 59(9): 2512-2522. doi: 10.1093/rheumatology/kez639. Erratum in: *Rheumatology (Oxford).* 2020; 59(9): 2655. doi: 10.1093/rheumatology/keaa101.
4. Lai CH, Lai WW, Chiou MJ, Lin WC, Yang YJ, et al. Outcomes of percutaneous coronary intervention in patients with rheumatoid arthritis and systemic lupus erythematosus: An 11-year nationwide cohort study. *Ann Rheum Dis.* 2016; 75(7): 1350-6. doi: 10.1136/annrheumdis-2015-207719.
5. Maksimowicz-McKinnon K, Selzer F, Manzi S, Kip KE, Mulukutla SR, et al. Poor 1-year outcomes after percutaneous coronary interventions in systemic lupus erythematosus: report from the National Heart, Lung, and Blood Institute Dynamic Registry. *Circ Cardiovasc Interv.* 2008; 1(3): 201-8. doi: 10.1161/CIRCINTERVENTIONS.108.788745.

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