

## Editorial Letter



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## Reducing Cardiovascular Risk in Lupus Pregnancy: A Structured Multi-Phasic Management Model

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Dear Chief Editor,

Systemic lupus erythematosus (SLE) is a multisystem autoimmune disease that affects 43.7 per 100,000 people worldwide, most commonly presenting in childbearing years. SLE pregnancies are complicated by cardiovascular events in up to 7.8% of cases, which translates to a 3.2- to 31.5-fold increase in severe maternal morbidity and a seven-fold increase in maternal mortality, compared to the general obstetric population. The highest risk is reported in cases with concurrent lupus nephritis or antiphospholipid syndrome [1]. These complications are not surprisingly seen; they are the end result of endothelial dysfunction, immune aberration, and placental dysfunction that precedes clinical decompensation by weeks [2,3]. The current approach in management is reactive, while SLE needs proactive care. We suggest a structured three-phase approach to managing cardiovascular risk in pregnancy with SLE, from pre-conception through delivery and post-partum (Figure 1).



**Figure 1:** A graphical representation of proposed management plan to reduce CVS risk in SLE pregnancies.

### Phase 1: Preconception – Optimizations

Preconception assessment must include a comprehensive cardiovascular risk optimization visit, not a simple disease activity assessment. The

cornerstone is prolonged remission for at least six months: having an active disease at conception doubles the flare-up risk and independently increases preeclampsia, fetal growth restriction, and miscarriage [1,4]. Risk assessment must be disease-specific. The SLECRISK calculator (Systemic Lupus Erythematosus Cardiovascular Risk)—including SLE activity, duration, creatinine, anti-dsDNA (anti-double-stranded deoxyribonucleic acid antibodies), lupus anticoagulant, and complement levels—identifies 3.4 times more moderate-to-high-risk patients than the ACC/AHA (American College of Cardiology/American Heart Association) calculator and is more sensitive in young women without traditional risk factors [2,3]. Population calculators tend to underestimate risk in this group and must be avoided. All women must be tested for antiphospholipid antibodies, anti-Ro/SSA, renal function, lipids, and glucose, and the body mass index (BMI) ought to be optimized, with hydroxychloroquine (HCQ) started or confirmed [5]. The 2025 European Society of Cardiology Guidelines now require a dedicated Pregnancy Heart Team for women in mWHO class II-III or above from pre-conception—a requirement this specialty should embrace immediately [6]. Non-pharmacological interventions for management, which involve normalizing weight, adopting a Mediterranean diet, and engaging in moderate aerobic exercise, should be prescribed at this point, each independently linked to lower cardiovascular and obstetric risk in SLE [5,7]. These are inexpensive and important recommendations, yet they are underused in daily practice.

### Phase 2: Pregnancy - Surveillance Before Deterioration

Pregnancy surveillance needs to be constructed on anticipation, not diagnosis. Three technologies are now well supported for widespread use. The biochemical surveillance, namely the sFlt-1/PIGF ratio, has a negative predictive value of over 99% for ruling out

preeclampsia in the next 7 days. Other biomarkers are the following: Type I interferon signatures are independently associated with endothelial dysfunction and vascular inflammation, suggesting that they may become biomarkers of thrombotic and cardiovascular risk, in addition to disease activity [8]. Finally, the first-trimester PIGF and uterine artery Doppler enhance early risk assessment [8,9]. The radiological surveillance includes global longitudinal strain (GLS) echocardiography that detects subclinical left ventricular dysfunction before ejection fraction declines—a lead-time benefit of conventional echocardiography [3,5]. Fetal echocardiography between 16 and 26 weeks is still mandatory in anti-Ro/SSA-positive women [10]. From an interventional aspect, HCQ decreases preterm birth odds ratio (OR) 0.57, intrauterine growth restriction (OR 0.48), gestational hypertension (OR 0.19), and preeclampsia (OR 0.46) and more than doubles the chance of term delivery; it is unacceptable to discontinue HCQ [5]. Aspirin before 16 weeks is required. Low molecular weight heparin (LMWH) is mandatory in confirmed antiphospholipid syndrome and should be considered in lupus nephritis or previous thrombosis [4]. Blood pressure should be kept below 140/90 mmHg with nephrology co-management in renal disease. A formal pre-labor cardiovascular review that discusses mode of delivery, anesthetic risk, and level of intrapartum monitoring is an under-recognized juncture that needs to be formalized [1].

### Phase 3: Postpartum - The Forgotten Phase

Pregnant women with SLE who suffer preeclampsia have a high burden of subclinical coronary artery calcification, confirming that pregnancy complicated by SLE is a sentinel cardiovascular event with long-term consequences—not simply a transient risk factor [8]. However, there has been no formalized postpartum cardiovascular care until now [11]. At a minimum, postpartum follow-up should include blood pressure monitoring for six weeks, venous thromboembolism watchfulness, continued use of HCQ, lipid and renal re-evaluation at three months, GLS echocardiography if peripartum compromise occurred, and formal SLECRISK re-stratification at 6 - 12 months[1,2], for women with anti-Ro/SSA, pregnancy counseling including HCQ is advised [5]. Postpartum depression must be distinguished from neuropsychiatric SLE, which has different important therapeutic implications [12]. Currently, four areas need urgent attention in SLE cardiovascular risk management: First prospective, multicenter validation of GLS, sFlt-1/PIGF, NT-proBNP, and interferon signatures in SLE pregnancy cohorts; second adaptation of SLECRISK to pregnancy, for which there is no validated equivalent; Third: randomized trials of structured multidisciplinary care vs. standard antenatal pathways; and fourth: long-term cardiovascular follow-up protocols for pregnancies complicated by SLE, a population at accelerated risk of atherosclerosis that has been almost completely ignored beyond the immediate puerperium.

### Conclusion

Cardiovascular risk in SLE pregnancy is not an event to be treated on the occurrence; it is a process that begins pre-conception, continues during pregnancy, and continues after birth. A three-stage approach to managing this process, incorporating disease-specific risk assessment, predictive biomarker monitoring, and postpartum cardiovascular monitoring, is clinically justifiable and feasible.

**Keywords:** Cardiovascular risk; Lupus pregnancy; Management model.

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### REFERENCES

1. Dhital R, Baer RJ, Kalunian K, Chambers C. Adverse pregnancy outcomes across SLE subgroups: significance of cardiovascular events. *Lupus Sci Med.* 2025;12(1). doi: 10.1136/lupus-2025-001507.
2. Choi MY, Guan H, Yoshida K, Paudel M, Kargere BA, Li D, et al. Personalizing cardiovascular risk prediction for patients with systemic lupus erythematosus. *Semin Arthritis Rheum.* 2024;67:152468. doi: 10.1016/j.semarthrit.2024.152468.
3. Zahid S, Mohamed MS, Wassif H, Nazir NT, Khan SS, Michos ED. Analysis of cardiovascular complications during delivery admissions among patients with systemic lupus erythematosus, 2004-2019. *JAMA Netw Open.* 2022;5(11):e2243388. doi: 10.1001/jamanetworkopen.2022.43388.
4. Nori W, Roomi AB, Akram W. Platelet indices as predictors of fetal growth restriction in Pre-eclamptic Women. *Revista Latinoamericana de Hipertensión.* 2020;15(4):280-285. doi: 10.5281/zenodo.4442971.
5. Du M, Zhang R, Na Y, Peng L, Bao S. Hydroxychloroquine therapy for women with both recurrent pregnancy loss and autoimmune disease: association with pregnancy outcomes and maternal-fetal complications. *Front Immunol.* 2026;17:1756063. doi: 10.3389/fimmu.2026.1756063.
6. De Backer J, Haugaa KH, Hasselberg NE, De Hosson M, Brida M, Castelletti S, et al. 2025 ESC Guidelines for the management of cardiovascular disease and pregnancy: Developed by the task force on the management of cardiovascular disease and pregnancy of the European Society of Cardiology (ESC) Endorsed by the European Society of Gynecology (ESG). *Eur Heart J.* 2025;46(43):4462-4568. doi: 10.1093/eurheartj/ehaf193.
7. Fanouriakis A, Kostopoulou M, Andersen J, Aringer M, Arnaud L, Bae SC, et al. EULAR recommendations for the management of systemic lupus erythematosus: 2023 update. *Ann Rheum Dis.* 2024;83(1):15-29. doi: 10.1136/ard-2023-224762.
8. Nikuei P, Rajaei M, Roozbeh N, Mohseni F, Poordarvishi F, Azad M, et al. Diagnostic accuracy of sFlt1/PIGF ratio as a marker for preeclampsia. *BMC Pregnancy Childbirth.* 2020;20(1):80. doi: 10.1186/s12884-020-2744-2.
9. Yamazaki T, Cerdeira AS, Teraoka Y, Oomori Y, Mukai Y, Sugimoto J, et al. Predictive accuracy of sFlt-1/PIGF ratio for preeclampsia and adverse outcomes: prospective, multicenter including primary, secondary, and tertiary care institutions, observational study in Japan. *Hypertens Res.* 2025;48(10):2548-2557. doi: 10.1038/s41440-025-02282-0.

10. Yaseen MJ, Neamaa EK, Haji GF. Assessment of high risk pregnant women by fetal echocardiography. *Al-Rafidain J Med Sci.* 2024;7(2):157-162. doi: 10.54133/ajms.v7i2.1476.
11. Ali T, Khan M, Jarwar MA. Toward precision maternal care in systemic lupus erythematosus: bridging data limitations and research gaps. *Clin Rheumatol.* 2025;44(11):4773-4774. doi: 10.1007/s10067-025-07705-4.
12. Gamba A, Zen M, Depascale R, Calligaro A, Gatto M, Iaccarino L, et al. Modern management of pregnancy in systemic lupus erythematosus: from prenatal counseling to post-partum support. *J Clin Med.* 2024;13(12):3454. doi: 10.3390/jcm13123454.