



CHALLENGES WITH MANAGING ACTIVE SYSTEMIC LUPUS ERYTHEMATOSUS IN PREGNANCY AND IMPACTS ON PREGNANCY OUTCOMES A CASE REPORT AND REVIEW OF LITERATURE

Dr Lynette Ngothanh¹, Dr Swetha Rao¹ & A/Prof Renuka Shanmugalingam²

1. Department of Obstetrics and Gynaecology, Liverpool Hospital, NSW, Australia 2. Department of Obstetrics Medicine, Liverpool Hospital, Sydney, NSW, Australia

INTRODUCTION

Systemic lupus erythematosus (SLE) is a chronic autoimmune multisystem disease affecting women of reproductive ages, making pregnancy a common and clinically important context for disease management. The prevalence of SLE in pregnancy is around 1 in 1000¹ and has increased over recent decades due to improved survival, earlier diagnosis and advances in disease-modifying therapy allowing more women to safely pursue pregnancy. Evidence shows key determinants of pregnancy outcomes in SLE include disease activity at conception, presence of lupus nephritis, antiphospholipid antibodies, chronic hypertension and renal impairment.² Women with SLE now experience substantially improved maternal survival compared with historical cohorts; however, pregnancy remains high risk, with increased rates of pre-eclampsia, foetal growth restriction, preterm birth, pregnancy loss and thrombotic complications. Managing pregnancy in SLE is challenging, requiring a balance between disease control, safe use of immunosuppressive therapy, and monitoring for complications such as lupus nephritis.

AIM

To highlight the complexities of managing active SLE during pregnancy and its effects on maternal and foetal outcomes.

CASE REPORT

A 27-year-old nulliparous woman with active SLE complicated by lupus nephritis and triple-positive antiphospholipid syndrome, delivered a 1.1kg female infant via classical caesarean section at 28 weeks.

The pregnancy was complicated by multiple SLE flares requiring hospitalisation and foetal concerns, with ultrasound evidence of MCA redistribution and reduced growth velocity. Following a multidisciplinary discussion, decision for delivery was made for worsening maternal disease, particularly severe joint involvement, and ongoing foetal concerns. Prior to delivery, creatinine was 133, dsDNA was 799, C3/C4 was 0.28/0.08, platelet count was 124, haemoglobin was 80 and white cell count was 2.5.

RESULTS

A literature review of major databases including PubMed, EMBASE and Cochrane Library, identified six key studies examining the impact of active SLE during pregnancy on maternal and foetal outcomes.

Across studies, disease activity at conception and during early pregnancy consistently emerged as the principal determinant of maternal outcome. The prospective PROMISSE study³ demonstrated that baseline disease activity strongly predicted maternal flares, while women with quiescent disease experienced significantly improved outcomes. These findings were reinforced by Clowse et al., who reported that active disease at conception approximately doubled the risk of maternal flare.

Maternal disease flares were consistently associated with increased obstetric morbidity. Active SLE was linked to higher rates of pre-eclampsia, HELLP syndrome, acute kidney injury, and intensive care unit admission, reflecting the impact of systemic inflammation and endothelial dysfunction when disease control is suboptimal.^{6,7}

With respect to foetal outcomes, active SLE was consistently associated with adverse placental-mediated complications.

Across the included studies, disease activity emerged as the dominant predictor of adverse foetal outcome. Active SLE was associated with an increase in preterm birth in women with active lupus nephritis. Similarly, foetal growth restriction occurred in approximately 20–30% of pregnancies with active disease, representing an estimated twofold increase compared with inactive disease states. Higher rates of pregnancy loss were also consistently observed across cohorts. These findings are summarised in Table 1.

Outcome	Baseline risk	Risk with active SLE	Risk Increase
Preterm birth	10-15%	30-50%	2-3 times higher
Foetal growth restriction	8-12%	20-30%	2 times higher
Pregnancy loss	8-10%	20-35%	2-4 times higher

Table 1: Effect of active SLE on foetal outcomes compared to baseline.^{3,4,8}

DISCUSSION

This case highlights the significant maternal and foetal risks associated with active systemic lupus erythematosus during pregnancy, particularly in women with lupus nephritis and antiphospholipid syndrome. Consistent with current evidence, disease activity at conception and during pregnancy remains the strongest predictor of adverse outcomes, including maternal flares, pre-eclampsia, renal deterioration, preterm birth and foetal growth restriction. These findings emphasise the importance of achieving preconception disease quiescence, maintaining pregnancy-safe immunosuppression and providing multidisciplinary care to optimise maternal and foetal outcomes. Active SLE therefore remains a high-risk condition in pregnancy, requiring careful planning, close surveillance and coordinated specialist management.

1. Lahert A, Peim M. Managing lupus patients during pregnancy. *Bull Pract Res Clin Rheumatol*. 2013 Jun;27(5):435-47. doi: 10.1016/j.bpr.2013.07.005. PMID: 24236698. PMCID: PMC3834362.
 2. Smyth A, Clowse G, Lane RD, Basky M, Nassy GA, Gacovic VO. A systematic review and meta-analysis of pregnancy outcomes in patients with systemic lupus erythematosus and lupus nephritis. *Clin J Am Soc Nephrol*. 2010 Nov;5(10):2065-8. doi: 10.2215/CJN.00240110. Epub 2010 Aug 5. PMID: 20688887. PMCID: PMC3007198.
 3. Bayon JP, et al. (2015) Predictors of pregnancy outcomes in patients with lupus: A prospective study. *Annals of Internal Medicine*, 163(3), 153-163. <https://doi.org/10.7326/M14-2232>
 4. Clowse M.E., et al. (2006) Lupus activity in pregnancy. *Arthritis & Rheumatism*, 54(2), 516-523. <https://doi.org/10.1002/art.21998>
 5. Smyth A, et al. (2010) A systematic review and meta-analysis of pregnancy outcomes in patients with systemic lupus erythematosus. *Annals of the Rheumatic Diseases*, 69(9), 1542-1548. <https://doi.org/10.1136/ard.2009.118653>
 6. Knight M, et al. (2015) Severe maternal morbidity in women with autoimmune disease. *BMC*, 14(10), 1719. <https://doi.org/10.1185/s12916-015-0569-9>
 7. Clark C.A., et al. (2016) Maternal mortality and morbidity in SLE pregnancies. *Journal of Rheumatology*, 43(1), 110-117. <https://doi.org/10.3929/ethz-b-000170919>
 8. Peim M. Prospective study of systemic lupus erythematosus pregnancies. *Lupus*. 2004;13(8):698-9. doi: 10.1191/09612033l04lup.15469.9a