Kidney Outcomes and Risk Factors for Nephritis (Flare/*De Novo*) in a Multiethnic Cohort of Pregnant Patients with Lupus

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Abstract

Background and objectives Kidney disease is a critical concern in counseling patients with lupus considering pregnancy. This study sought to assess the risk of renal flares during pregnancy in women with previous lupus nephritis in partial or complete remission, particularly in those with antidouble-stranded DNA antibodies and low complement levels, and the risk of new-onset nephritis in patients with stable/mildly active SLE.

Design, setting, participants, & measurements We assessed active nephritis (renal flares and *de novo* kidney disease) and associated predictors during pregnancy in patients with lupus with urine protein ≤1000 mg and serum creatinine <1.2 mg/dl at baseline; 373 patients (52% ethnic/racial minorities) enrolled between 2003 and 2012 were prospectively followed in the Predictors of Pregnancy Outcome: Biomarkers in Antiphospholipid Syndrome and Systemic Lupus Erythematosus Study. Active nephritis was defined by proteinuria increase of >500 mg and/or red blood cell casts.

Results Of 118 patients with previous kidney disease, 13 renal flares (11%) occurred (seven of 89 in complete remission and six of 29 in partial remission) compared with four with *de novo* kidney involvement (2%) in 255 patients without past kidney disease ($P<0.001$). Active nephritis was not associated with ethnicity, race, age, creatinine, BP, or antihypertensive and other medications. In multivariable logistic regression analyses, patients with past kidney disease in complete or partial remission more often experienced active nephritis (adjusted odds ratio, 6.88; 95% confidence interval, 1.84 to 25.71; $P=0.004$ and adjusted odds ratio, 20.98; 95% confidence interval, 4.69 to 93.98; $P<0.001$, respectively) than those without past kidney disease. Low C4 was associated with renal flares/*de novo* disease (adjusted odds ratio, 5.59; 95% confidence interval, 1.64 to 19.13; $P<0.01$) but not low C3 or positive anti-dsDNA alone.

Conclusions *De novo* kidney involvement in SLE, even in ethnic/racial minorities, is uncommon during pregnancy. Past kidney disease and low C4 at baseline independently associate with higher risk of developing active nephritis. Antibodies to dsDNA alone should not raise concern, even in patients with past kidney disease, if in remission.

systemic lupus erythematosus | Pregnancy Outcome | Antihypertensive Agents | Antiphospholipid Syndrome | Biomarkers | blood pressure | Counseling | creatinine | Erythrocytes | Female | Humans | Kidney Diseases | Logistic Models | Lupus Erythematosus, Systemic | lupus nephritis | Pregnancy | proteinuria | risk factors

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