Anti-C1q antibodies in systemic lupus erythematosus.

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Abstract

OBJECTIVE: Anti-C1q has been associated with systemic lupus erythematosus (SLE) and lupus nephritis in previous studies. We studied anti-C1q specificity for SLE (vs rheumatic disease controls) and the association with SLE manifestations in an international multicenter study.

METHODS: Information and blood samples were obtained in a cross-sectional study from patients with SLE (n = 308) and other rheumatologic diseases (n = 389) from 25 clinical sites (84% female, 68% Caucasian, 17% African descent, 8% Asian, 7% other). IgG anti-C1q against the collagen-like region was measured by ELISA.

RESULTS: Prevalence of anti-C1q was 28% (86/308) in patients with SLE and 13% (49/389) in controls (OR = 2.7, 95% CI: 1.8-4, p < 0.001). Anti-C1q was associated with proteinuria (OR = 3.0, 95% CI: 1.7-5.1, p < 0.001), red cell casts (OR = 2.6, 95% CI: 1.2-5.4, p = 0.015), anti-dsDNA (OR = 3.4, 95% CI: 1.9-6.1, p < 0.001) and anti-Smith (OR = 2.8, 95% CI: 1.5-5.0, p = 0.01). Anti-C1q was independently associated with renal involvement after adjustment for demographics, ANA, anti-dsDNA and low complement (OR = 2.3, 95% CI: 1.3-4.2, p < 0.01). Simultaneously positive anti-C1q, anti-dsDNA and low complement was strongly associated with renal involvement (OR = 14.9, 95% CI: 5.8-38.4, p < 0.01).
CONCLUSIONS: Anti-C1q was more common in patients with SLE and those of Asian race/ethnicity. We confirmed a significant association of anti-C1q with renal involvement, independent of demographics and other serologies. Anti-C1q in combination with anti-dsDNA and low complement was the strongest serological association with renal involvement. These data support the usefulness of anti-C1q in SLE, especially in lupus nephritis.