Evaluation of endothelial cell adhesion molecules and anti-C1q antibody in discriminating between active and non-active systemic lupus erythematosus

ABSTRACT

Background: Detecting the active state of systemic lupus erythematosus (SLE) is important but challenging. This study aimed to determine the diagnostic accuracy of serum endothelial cell adhesion molecules (ICAM-1 and VCAM-1) and anti-C1q antibody in discriminating between active and non-active SLE. Methods: Using SELENA-SLE disease activity index (SLEDAI), 95 SLE patients (45 active and 50 non-active) were assessed. A score above five was considered indicative of active SLE. The blood samples were tested for serum ICAM-1, VCAM-1 and anti-C1q antibody using enzyme-linked immunosorbent assay (ELISA). Results: The levels of serum VCAM-1 and anti-C1q antibody were significantly higher in active SLE patients. Both VCAM-1 and anti-C1q were able to discriminate between active and non-active SLE (p-value < 0.001 and 0.005, respectively). From the receiver operating characteristic curves (ROCs) constructed, the optimal cut-off values for VCAM-1 and anti-C1q antibody in discriminating between active and non-active SLE were 30.5 ng/mL (69.0% sensitivity, 60.0% specificity, PPV 58.5%, NPV 66.7%) and 7.86 U/mL (75.6% sensitivity, 80% specificity, PPV 77.3%, NPV 78.4%), respectively. However, serum ICAM-1 level was unable to discriminate between the two groups (p-value = 0.193). Conclusion: Anti-C1q antibody demonstrated the best diagnostic accuracy in discriminating between active and non-active SLE patients.

Keyword: Cell adhesion molecules; Intercellular adhesion molecule-1 (ICAM-1); Vascular cell adhesion molecule-1 (VCAM-1); Anti-C1q antibody; Systemic lupus erythematosus