Background and aims Several cytokines such as IL-10, IL-17, IL-23, and vitamin D have been suspected in the pathogenesis of SLE. However, the association between these cytokines, vitamin D and disease activity is unknown. We aimed to determine the association between IL-10, IL-17, IL-23, vitamin D and SLEDAI score.

Methods We included 40 patients with SLE and 20 healthy controls in the study. Clinical and laboratory parameters and, SLEDAI score were evaluated. Serum IL-10, IL-17 and IL-23 were measured by nephelometry and vitamin D by HPLC. Mann-Whitney U and Kolmogorov-Smirnov test were used for statistical analysis.

Results The level of vitamin D was significantly lower (p<0.0003), and IL-23 was significantly higher (p=0.0001) in SLE patients compared to healthy controls. There was no significant difference for IL-10 and IL-17 between both group (p>0.05). However, a significant correlation between vitamin D and disease duration (p=0.02), and between IL-23 and vitamin D (p=0.019) were found among SLE patients. Vitamin D levels were correlated with SLEDAI score and IL-23 in patients group.

Conclusions Although there are studies supporting the role of IL-10 and IL-17 in the pathogenesis of SLE in the literature, there was no significant difference between patients and healthy controls in our study. IL-23 levels were significantly higher, whereas vitamin D levels were significantly lower in SLE patients than in the control group. Also vitamin D levels were negative correlated with duration of disease and IL-23. Levels of IL-23 may be used to evaluated the disease activity, or may be a promising therapeutic approach for SLE patients.