Association of left ventricular geometry abnormalities and disease activity in systemic lupus erythematosus patients

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BACKGROUND

Patients with systemic lupus erythematosus (SLE) have higher risk of developing a cardiovascular event than the general population, with multiple factors contributing to this increased risk, including systemic inflammation.

OBJECTIVE

To compare the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI) and other disease characteristics of SLE patients with and without left ventricular (LV) geometry abnormalities.

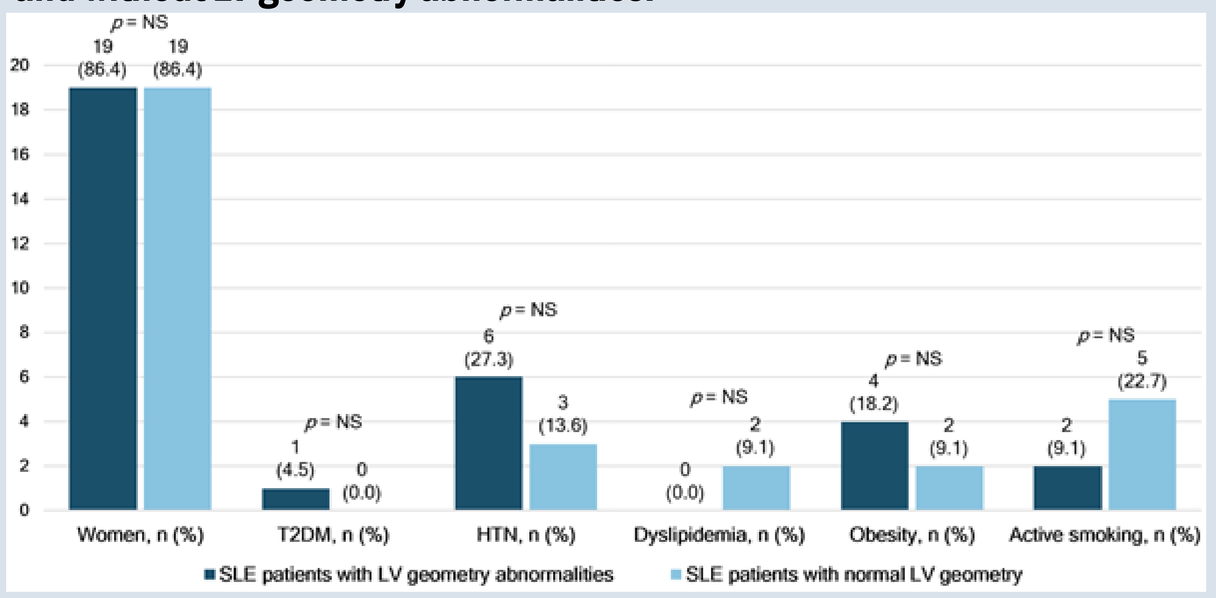
METHODS

This was a cross-sectional study nested of a SLE cohort. We recruited patients with SLE diagnosis aged ≥ 18 years. A transthoracic echocardiogram was performed. Disease activity was assessed with SLEDAI. SLE patients with LV geometry abnormalities were included and matched by age and gender to SLE patients with normal LV geometry. Comparisons with Chi-square or Fisher's exact test for qualitative variables, and Student's T-test or Mann-Whitney's U-test for quantitative variables. A p-value < 0.05 was considered significant.

RESULTS

A total of 44 SLE patients were included, 22 with LV geometry abnormalities and 22 with normal LV geometry. Mean age of SLE patients with LV geometry abnormalities was 35.1 ± 12.2 years, compared to 35.4 ± 9.4 years of SLE patients with normal LV geometry, p = 0.923. Demographic characteristics in Figure 1.

Figure 1. Comparison of demographic characteristics of SLE patients with and without LV geometry abnormalities.



We found that SLEDAI was significantly higher in SLE patients with LV geometry abnormalities (26.45 vs 17.33, p = 0.016) (Table 1).

Table 2. disease characteristics of SLE patients with and without LV geometry abnormalities.

Variables	Patients with LV geometry abnormalities (n=22)	Patients with normal LV geometry (n=22)	p-value
Disease duration, months, median (IQR)	60.0 (12.7-150)	72.0 (43.0-117.7)	NS
SLEDAI, median (IQR)	10.5 (4.0-15.0)	6.0 (2.0-9.0)	**0.016**
CRP, mg/dl, median (IQR)	0.52 (0.33-1.29)	0.60 (0.41-0.85)	NS
ESR, mm/h, median (IQR)	26.0 (13.2-34.2)	29.0 (8.7-58.5)	NS
ANA titers, median (IQR)	640 (160-3200)	480 (160-5120)	NS
Anti-dsDNA, median (IQR)	0 (0-160)	0 (0-200)	NS
C3, mean ± SD	94.6 ± 31.4	100.5 ± 46.1	NS
C4, median (IQR)	13.6 (9.8-14.9)	12.8 (6.4-19.8)	NS
Anti-Ro, median (IQR)	4.5 (2.0-190.5)	3.5 (2.0-82.2)	NS
Anti-La, median (IQR)	2.0 (2.0-4.0)	2.0 (2.0-3.0)	NS
Hydroxychloroquine, n (%)	20 (90.9)	18 (81.8)	NS
Glucocorticoids, n (%)	19 (86.4)	17 (77.3)	NS

SLE, systemic lupus erythematosus; LV, left ventricular; NS, not significant; SLEDAI, Systemic Lupus Erythematosus Disease Activity Index; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ANA, antinuclear antibodies; anti-dsDNA, anti-double stranded DNA.

CONCLUSION

SLE patients with LV geometry abnormalities had higher SLEDAI than patients with normal LV geometry. A transthoracic echocardiogram may be useful detect early cardiovascular abnormalities in SLE patients with high disease activity, and therefore should be considered as part of the cardiovascular evaluation of these patients.

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