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THE PROFILE OF PULMONARY PERFUSION SCINTIGRAPHY, PULMONARY AND CARDIAC FUNCTION, FUNCTIONAL CAPACITY AND CLINICAL ASPECTS IN SYSTEMIC LUPUS ERYTHEMATOSUS OUTPATIENTS: A CROSS-SECTION

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BACKGROUND

Chronic pulmonary embolism is a common cardiopulmonary disease that can develop without symptoms. No previous studies exist focusing on patients with systemic lupus erythematosus (SLE) and pulmonary perfusion scintigraphy, lung and cardiac function, functional capacity, and clinical aspects. The aim was to examine and describe lung and cardiac function, functional capacity, and clinical aspects in patients with SLE and correlate to residual perfusion defect (RPD).

MATERIAL AND METHODS

Sixty-six consecutive SLE patients followed at a public rheumatology service in Brazil were included, from March 2018 to December 2019. Pulmonary perfusion scintigraphy was performed only in patients without alteration in X-ray and RPD was calculated by semiquantitative analysis with criteria validated by the method proposed by Meyer et al. Spirometry, pulmonary diffusion capacity for carbon monoxide, echocardiography, 6-minute walk test and New York Heart Association functional class results were compared with reference values. Perceived exertion was rated with Borg CR-10 scale. Clinical aspects data were collected by a questionnaire and electronic medical record.

RESULTS

The statistical analysis was performed subdividing the patients into groups, 32 in RPD < 10% (mean $2.4 \pm 3\%$) and 34 RPD $\geq 10\%$ (mean $24 \pm 12\%$). There were 92.5% of women with mean age 41.7 ± 13 years. The NYHA III/IV functional class occurred in only 7 people (10%), making its statistical analysis unfeasible. Univariate analysis selected five predictor variables for further analysis: forced expiratory volume in the first second (FEV₁), the ratio of FEV₁ to forced vital capacity (FEV₁/FVC), hemolytic anemia, chronic cutaneous lupus and arthralgia. Table 1 shows data of linear regression. Hemolytic anemia does not enter the model, as the frequency is zero in the RPD $\geq 10\%$.

Table 1. The two models of data of linear regression analysis, according to FEV₁ and FEV₁/FVC.

Variable	p-value	OR	CI 95%	More likely to have DPR $\geq 10\%$
FEV ₁	0.008	0.93	0.88–0.98	Lower FEV ₁ values
Arthralgia	0.035	0.04	0.002–0.81	Absence of arthralgia
Chronic cutaneous lupus	0.039	0.06	0.004–0.87	Absence of chronic cutaneous lupus
Variable	p-value	OR	CI 95%	More likely to have DPR $\geq 10\%$
FEV ₁ /FVC ratio cutoff ≤ 0.81	0.028	4.61	1.18–18.1	FEV ₁ /CVF ratio ≤ 0.81
Arthralgia	0.083	0.13	0.01–1.30	Absence of arthralgia
Chronic cutaneous lupus	0.057	0.09	0.01–1.07	Absence of chronic cutaneous lupus

FEV₁: forced expiratory volume in 1 second predicted; FVC: forced vital capacity; OR: odds ratio; CI: confidence interval.

CONCLUSIONS

This study indicates that SLE with RPD $\geq 10\%$ have a reduced significantly FEV1 and FEV1/CVF compared with reference.

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