Epidemiology of Lupus Nephritis in Brazil: Findings From the Macunaíma Study – A Nationwide Multicentric Study

POS1430

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Background

- LN is one of the most serious organ manifestations of SLE[1]
- Ethnicity can contribute to disparities in the prevalence and disease activity of LN[1]

Objective

To assess LN prevalence in Brazilian patients with SLE and to determine factors associated with LN activity across the country.

Methods

- This cross-sectional study (GSK Study 207353) was carried out through face-to-face interviews with patients and a review of medical records (12- month study period)
- Adults (≥18 years of age) with SLE (1997 ACR criteria[2]) were included. Patients with another disease whose morbidity surpassed SLE were excluded
- Five SLE reference teaching facilities were selected, one in each of the following Brazilian regions: NO, NE, MW, SE, and SO
- LN was defined as reported in the medical record or history of confirmed renal biopsy; disease activity was indicated by pre-defined changes in SLEDAI or the patient's kidney disease
- Activity was assessed during (T0), 6 months before (T6), and 12 months before (T12) the interview. SDI score was used to evaluate accumulated organ damage
- Two pairings were performed to discriminate factors associated with LN and its activity, respectively. Matching technique was used to select similar individuals based on propensity scores obtained from a logistic regression model. A bootstrapping method explored characteristics associated with the risk of progressing to LN

Results

Patient characteristics

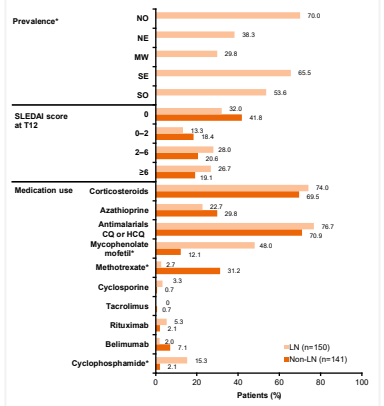
- Of the 300 Brazilian patients with SLE who were interviewed, 150 and 141 were paired and assigned to the LN and non-LN groups, respectively (**Table 1**)
- The overall LN prevalence in this paired sample (N=291) was 51.5%, with a disparity between centres (p<0.001; **Figure 1**)
- Non-active workers predominated among the LN group (n=115; **Table 1**), indicating that LN may cause work cessation in Brazilian patients with SLE

Table 1. Baseline demographics and disease characteristics (N=291)

	Overall (N=291)	LN (n=150)	Non-LN (n=141)
Region*, n (%)			
NO	60 (20.6)	42 (28.0)	18 (12.8)
NE	60 (20.6)	23 (15.3)	37 (26.2)
MW	57 (19.6)	17 (11.3)	40 (28.4)
SE	58 (19.9)	38 (25.3)	20 (14.2)
SO	56 (19.2)	30 (20.0)	26 (18.4)
Female, n (%)	272 (93.5)	139 (92.7)	133 (94.3)
Race, n (%)			
White	72 (24.7)	34 (22.7)	38 (27.0)
Black	55(18.9)	30 (20.0)	25 (17.7)
Latino	157 (54.0)	82 (54.7)	75 (53.2)
Other	7 (2.4)	4 (2.7)	3 (2.1)
Age†, years, mean (SD)	41.6 (12.2)	39.5 (11.9)	44.0 (12.2)
Years of schooling‡, mean (SD)	11.4 (4.7)	12.2 (5.0)	10.6 (4.2)
Stopped education due to SLE (permanently), n (%)	46 (15.8)	28 (18.7)	18 (12.8)
Stopped education due to SLE (temporarily) n (%)	37 (12.7)	23 (15.3)	14 (9.9)
Employment§, n (%)			
Active	78 (26.8)	35 (23.3)	43 (30.5)
Retired or sick leave due to SLE	97 (33.3)	61 (40.7)	36 (25.5)
Unemployed	63 (21.6)	33 (22.0)	30 (21.3)
Other	53 (18.2)	21 (14.0)	32 (22.7)
Absenteeism in past 12 months	64 (22.0)	28 (18.7)	36 (25.5)
Absenteeism – number of days	53.7 (90.5)	76.1 (117.3)	35.3 (55.8)
Comorbidities and medical history, n (%)			
Hypertension*	151 (51.9)	98 (65.3)	53 (37.6)
Diabetes	18 (6.2)	11 (7.3)	7 (5.0)
Dyslipidaemia†	70 (24.1)	49 (32.7)	21 (14.9)
Obesity‡	54 (18.6)	35 (23.3)	19 (13.5)
Smoking	30 (10.3)	13 (8.7)	17 (12.1)
Alcoholism	20 (6.9)	7 (4.7)	13 (9.2)
Tuberculosis	26 (8.9)	17 (11.3)	9 (6.4)
Access to care, mean (SD)			
Time between onset of symptoms and start of treatment, months	6.3 (15.2)	4.8 (11.9)	7.9 (17.9)
Travel time from home to facility, h	4.4 (12.6)	5.3 (15.3)	3.4 (8.9)
Missing medical appointments during study period (any reason)	0.7 (1.2)	0.8 (1.2)	0.6 (1.3)
Number of medications per day‡	6.6 (3.8)	7.0 (3.8)	6.1 (3.8)

*p<0.001; †p<0.01; ‡p<0.05

Figure 1. Prevalence of LN by region, disease activity at T12, and medication use (N=291)



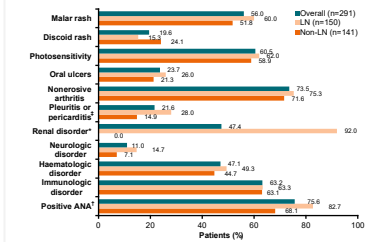
*p<0.001

- History of serositis (pleuritis or pericarditis) was associated with the presence of LN (**Figure 2**). Type IV histological class predominated in both groups, with no disparity between centres

Disease activity in patients with active or non-active LN

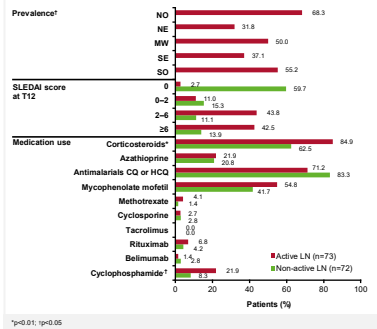
- When pairing for disease activity at T12, 73/145 (50.3%) patients with LN had active disease. There was regional disparity in terms of disease activity, with a predominance of active LN in the NO and SO (**Figure 3**)
- Type IV histological class was the component most associated with active LN (active: n=32 [43.8%]; non-active: n=11 [15.3%], p<0.001)

Figure 2. Comparison of LN and non-LN by disease activity (N=291)



*p<0.001; †p<0.01; ‡p<0.05

Figure 3. Prevalence of active and non-active LN by region, disease activity at T12, and medication use (N=145)



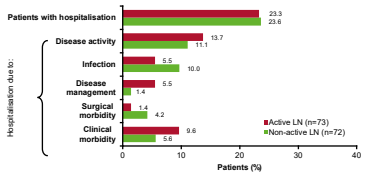
*p<0.01; †p<0.05

- Variation in SLEDAI during the study distinguished between active and non-active LN. Mean (SD) SLEDAI score at T12 was substantially higher in active LN versus non-active LN (7.18 [4.83] vs 2.47 [4.63], p<0.001)

Access to care in patients with active or non-active LN

- Corticosteroids use prevailed in patients with active LN. There was no disparity in the use of immunosuppressants, except for cyclophosphamide, noted in more patients with active LN than those with non-active LN (**Figure 3**). To note, some treatments for SLE are prescribed but are not reimbursed by the National Healthcare System in Brazil
- Psychotropic or anticonvulsant use was higher in patients with non-active LN (n=32 [44.4%] vs n=17 [23.3%] patients with active LN; p=0.012)
- Consultation with a neurologist was noted for 15 (20.8%) patients with non-active LN and 6 (8.2%) with active LN (p=0.055)
- Hospitalisation occurred in 17 patients with non-active (23.6%) and active (23.3%) LN (**Figure 4**)

Figure 4. Comparison of active and non-active LN by hospitalisation profile



Conclusions

Disparities in LN prevalence and its activity were evident between the regions across Brazil, highlighting differences in clinical factors, regional factors, and patterns of care.

Abbreviations

ACR, American College of Rheumatology; ANA, anti-nuclear antibodies; CQ, chloroquine; HCQ, hydroxychloroquine; LN, lupus nephritis; MW, Midwest; NE, Northeast; NO, North; SD, standard deviation; SDI, Systemic Lupus International Collaborating Clinics (SLICC)/ACR Damage Index; SE, Southeast; SLE, systemic lupus erythematosus; SLEDAI, SLE Disease Activity Index; SO, South.

References

1. Gasparotto M, *et al. Rheumatology* 2020;59:v39–v51.
2. Hochberg MC. *Arthritis Rheum* 1997;40:1725–34.

Disclosures

MMdA has received grant/research support from Amgen, Biogen, GlaxoSmithKline (GSK), and Libbs. **OAM** is a consultant for AbbVie, GSK, and Janssen, and is on the speakers bureau for AbbVie, GSK, Novartis, Roche, and UCB. **VF** has received grant/research support from GSK, Novartis, and Pfizer, and is on the speakers bureau for AbbVie, Janssen, Novartis, Pfizer, and Roche. **FRML**, **BdV** are employees of GSK. **ND** is an employee of GSK and holds stocks and shares in the company. **DSNdL** received grant/research support from GSK. **ACM**, **FdSB**, **BERGB**, **MMdCM** report no disclosures.

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