PREGNANCY AND OBSTETRIC OUTCOMES IN SYSTEMIC LUPUS ERYTHEMATOSUS: INSIGHTS FROM THE GLADEL 2.0 COHORT

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Background

The objective of this study was to describe obstetric outcomes in women with systemic lupus erythematosus (SLE) from a Latin American cohort with five years of follow-up, and to identify factors associated with adverse pregnancy outcomes (APOs).

Methods

Women from the GLADEL 2.0, multinational and multiethnic cohort, with at least one pregnancy during the follow-up period were included. Clinical, laboratory, disease activity (SLEDAI 2K), damage (SDI), and treatment data were collected. Fetal-maternal complications included miscarriage, fetal death, preeclampsia/eclampsia, prematurity, neonatal lupus, and congenital heart block. The presence of any of these complications defined APO. Descriptive statistics were performed, clinically significant factors were identified, and logistic regression was used to identify factors independently associated with APO.

Results

Out of 970 women, 377 had at least one pregnancy, 342 had experienced pregnancies before cohort entry, and 190 (50.4%) reported at least one APO. The 51 women who became pregnant during the follow-up and their 65 corresponding pregnancies were examined. In this group, APO was observed in 27 pregnancies (41.5%) among 22 women. The most common fetal-maternal complications were miscarriages (23.1%) and preterm births (13.8%), followed by preeclampsia (4.6%) and fetal loss (3.1%). Importantly, no cases of neonatal lupus or congenital heart block were reported. Table 1 depicts the general characteristics of women according to the presence or absence of APO. The mean age (SD) at conception was 30.5 (6.26) years. Mestizo patients more frequently experienced APO (77.8% vs. 60.5%). Women with APO had a higher prevalence of lupus nephritis (LN) and neuropsychiatric involvement compared with women with no APOs (81.5% vs. 47.4%, p=0.012; and 22.2% vs. 2.6%, p=0.017; respectively). Physician's Global Assessment (PGA ≥2), damage accrual during follow-up (Δ-SDI ≥1), and antihypertensive medication use were also more common in the APO group.

In the multivariate analysis, after adjustment for ethnicity, socioeconomic status, antihypertensive treatment and neuropsychiatric manifestations, LN (OR 4.47, p=0.023), higher PGA ≥2 (OR 6.58, p=0.015), and SDI >0 (OR 1.76, p=0.023) were independently associated with APO (Table 2).

TABLE 1.
Sociodemographic and clinical characteristics and treatments of pregnancies, according to the presence or absence of adverse pregnancy outcome (APO)

	TOTAL PREGNANCIES (n=65)	APO (n=27)	NO APO (n=38)	*p* VALUE
Age at diagnosis, mean (SD), years	21.5 (5.62)	20.6 (5.13)	22.1 (5.92)	0.295
Age at visit, mean (SD), years	30.5 (6.26)	30.3 (6.26)	30.6 (6.33)	0.900
Education, mean (SD), years	12.9 (3.77)	12.2 (3.13)	13.4 (4.14)	0.208
Ethnic group, n (%)				0.032
Mestizo	44 (67.7)	21 (77.8)	23 (60.5)	
Caucasian	17 (26.2)	3 (11.1)	14 (36.8)	
African-Latin American	4 (6.2)	3 (11.1)	1 (2.6)	
Socioeconomic status, n (%)				0.147
Low/Middle low	30 (46.9)	13 (48.1)	17 (44.7)	
Middle	20 (31.3)	11 (40.7)	9 (23.7)	
Middle high/high	14 (21.9)	3 (11.1)	11 (28.9)	
Medical coverage, n (%)				0.510
Partial coverage	11 (16.9)	6 (22.2)	5 (13.2)	
Without coverage	29 (44.6)	10 (37.0)	19 (50.0)	
Total coverage	23 (35.4)	9 (33.3)	14 (36.8)	
BMI, mean (SD)	27.3 (5.95)	27.3 (7.44)	27.3 (4.44)	0.981
Comorbidities, n (%)				
Hypertension	16 (24.6)	7 (25.9)	9 (23.7)	1.000
Diabetes mellitus	1 (1.5)	0 (0.0)	1 (2.6)	1.000
Dyslipidemia	7 (10.8)	3 (11.1)	4 (10.5)	1.000
Lupus nephritis, n (%)	40 (61.5)	22 (81.5)	18 (47.4)	0.012
Neuropsychiatric manifestations, n (%)	7 (10.8)	6 (22.2)	1 (2.6)	0.017
PGA ≥2, n (%)	13 (20.0)	10 (37.0)	3 (7.9)	0.010
SLEDAI-2K, mean (SD)	3.02 (4.45)	3.85 (5.45)	2.42 (3.54)	0.329
SDI at pregnancy, mean (SD)	0.71 (1.25)	1.19 (1.57)	0.37 (0.82)	0.022
Δ-SDI ≥1, n (%)	7 (10.8)	6 (22.2)	1 (2.6)	0.017
Anti-dsDNA positive, n (%)	9 (13.8)	5 (18.5)	4 (10.5)	0.461
SLE treatment antihypertensives, n (%)	15 (23.1)	10 (37.0)	5 (13.2)	0.043
Aspirin, n (%)	19 (29.2)	9 (33.3)	10 (26.3)	0.737
Vitamin D, n (%)	22 (33.8)	12 (44.4)	10 (26.3)	0.209
Hospitalizations*, n (%)	12 (18.5)	6 (22.2)	6 (15.8)	0.890
Infections*, n (%)	20 (30.8)	9 (33.3)	11 (28.9)	1.000

*Before pregnancy
***APO:** adverse pregnancy outcome
***BMI:** body mass index
***PGA:** Physician's Global Assessment
***SDI:** Systemic Lupus International Collaborating Clinics/American College of Rheumatology Damage Index
***Δ-SDI:** increase in SDI value #1 during follow-up

TABLE 2.
Logistic Regression Model: at least an adverse pregnancy outcome (APO) during the 5-year follow-up period in pregnant women with SLE

	MULTIVARIABLE MODEL		
Characteristic	**OR**	**95% CI**	***p* value**
Lupus nephritis	4.47	1.31, 18.0	0.023
SDI	1.76	1.11, 3.02	0.023
PGA	6.58	1.57, 35.8	0.015

***CI:** confidence interval
***OR:** odds ratio
***PGA:** Physician's Global Assessment
***SDI:** Systemic Lupus International Collaborating Clinics/American College of Rheumatology Damage Index

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Conclusion

In this large Latin American SLE cohort, adverse pregnancy outcomes were strongly associated with LN, higher disease activity, and cumulative organ damage. These findings underscore the need for optimized preconception counseling and close multidisciplinary pregnancy monitoring.

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