Epidemiology and burden of illness of lupus in children by form of lupus: a retrospective longitudinal national hospital claims study in France

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BACKGROUND AND OBJECTIVES

Lupus is an autoimmune disease that can affect children, with usually an onset during teen years. In children, symptoms are similar to those in adults, but can be more severe and with a greater frequency of renal manifestations.

While lupus is a widespread disease, its awareness and its impact lag behind that of many other pediatric illnesses with scarce research to characterize its natural history and associated burden to patients and healthcare systems.

The objective of this study was to characterize the burden of child-onset lupus in the nationwide hospital system in France.

METHODOLOGY

A retrospective study, using the French national claims hospital database (PMSI), was conducted, including all pediatric patients (<18 years) at first hospitalization for lupus (index hospitalization) (ICD-10-CM for Systemic Lupus Erythematosus (SLE, M32.XX) and/or Lupus Erythematosus (LE, L93.XX) between January 2018 and December 2021. Patients were followed until last hospitalization or up to December 2022. Patient characteristics were assessed at baseline. Hospital burden was evaluated during the follow period, including the number of all cause hospitalizations (inpatient and outpatient (day care) per patient per year (PPPY), number of lupus hospitalizations and average length of stay (aLOS).

RESULTS

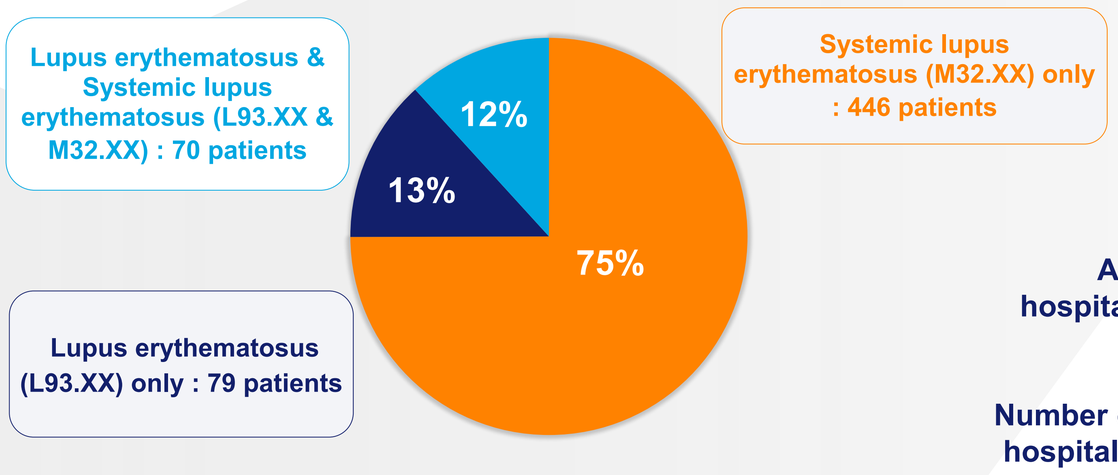

Figure 1 : Number of pediatric patients by type of lupus

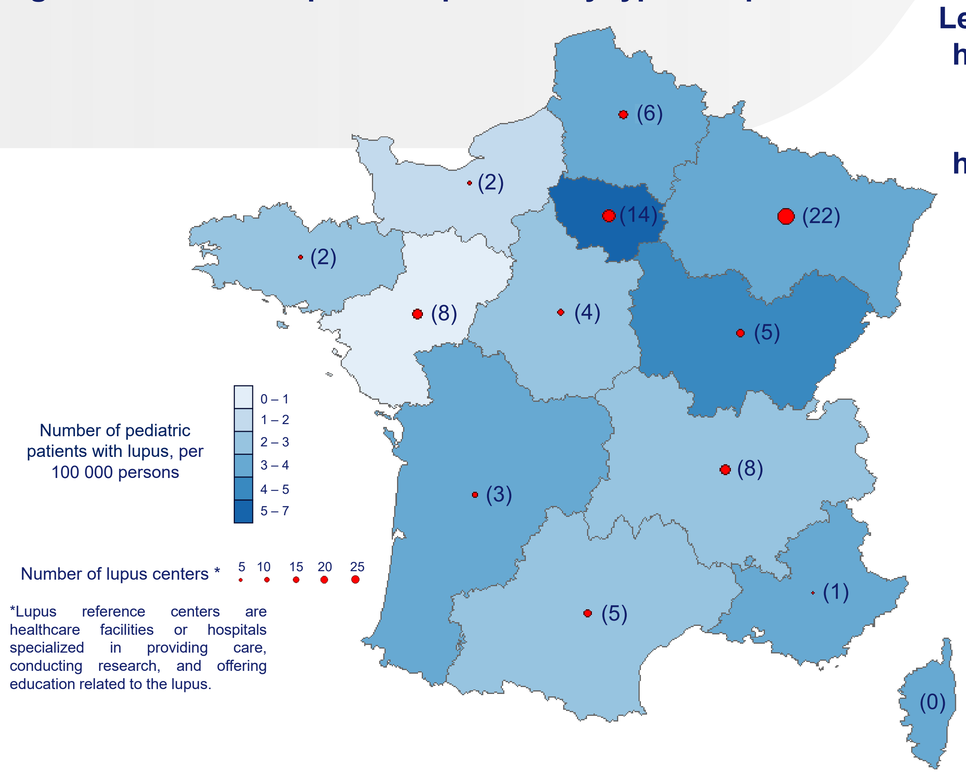

Figure 2 : Geographical distribution of lupus and lupus treatment centers

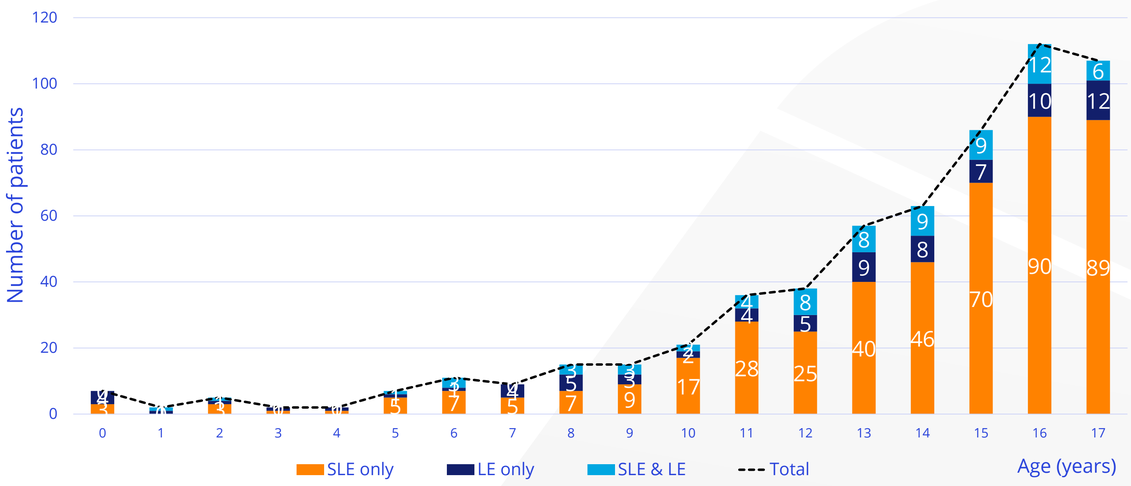

Figure 3 : Age distribution at index hospitalization by lupus type

	SLE only	LE only	LE & SLE
	n = 446	n = 70	n = 79
Women	85%	75.9%	82.9%
Age in years at index hospitalization; mean (SD)	13.9 (3.2)	11.9 (1.3)	12.8 (3.6)
Number of PPPY "all cause" hospitalizations; mean (SD)	3.5 (8.5)	1.0 (1.8)	4.9 (4.6)
Length of stay of "all cause" hospitalizations; mean (SD)	1.8 (6.6)	0.9 (2.4)	2.2 (8.5)
Number of PPPY Lupus hospitalizations; mean (SD)	1.4 (2.2)	0.3 (0.9)	3.5 (3.3)
Duration of follow-up in years , mean (SD)	2.0 (1.3)	1.9 (1.3)	2.8 (1.2)
Comorbidities :			

Legend: PPPY - per patient per year

Figure 4: Patient characteristics and hospital burden

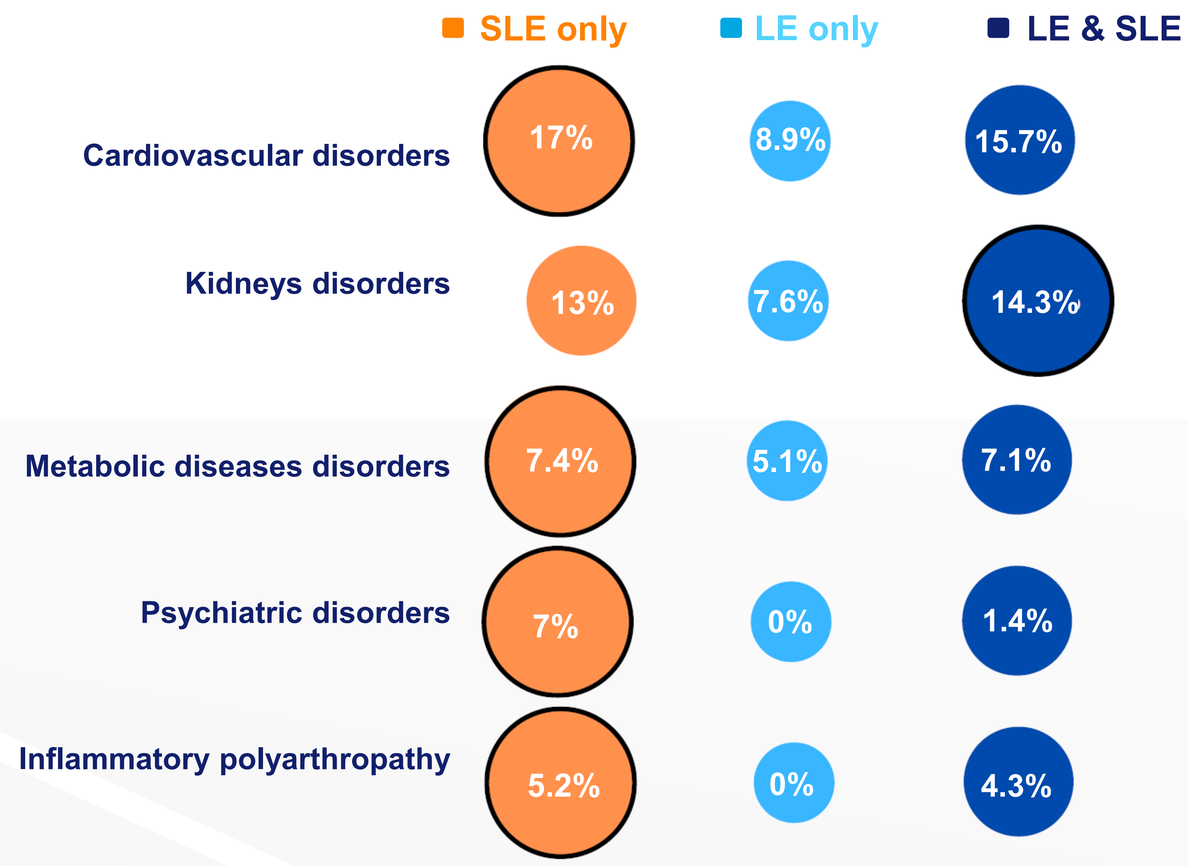

Figure 5: Prevalence of comorbid disorders by lupus subtype

Larger bubble size depicts larger prevalence by lupus subtype, for a given disorder.

CONCLUSION

With a high number of annual hospitalizations (lupus and not lupus-related), high prevalence of comorbidities, this study highlights the high burden of disease in patients with pediatric lupus onset, with a trend towards a higher burden in patients with LE & SLE. Differences in the regional prevalence of the disease are not matched with corresponding number of lupus centers. Further analyses are required to assess the economic burden of the disease (overall and by lupus type) and whether differences in access to lupus centers is associated with differences in management of patients and outcomes.

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