flare cluster included Delaware, Delaware Bay area, and Chesapeake Bay area between 2003 and 2014. Maps were generated highlighting the study area, flares, and identified clusters from all analyses. The space-time effects of environmental and demographic variables on the identified clusters will be considered in subsequent analysis.

Conclusions We describe the first space-time clusters of lupus organ-specific disease activity strongly supporting the role of environmental factors as drivers of lupus activity.

PS3:46 RELATIONSHIP BETWEEN DAMAGE CLUSTERING AND MORTALITY IN JUVENILE SYSTEMIC LUPUS ERYTHEMATOSUS: CLUSTER ANALYSES IN A LARGE COHORT FROM THE SPANISH SOCIETY OF RHEUMATOLOGY LUPUS REGISTRY

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Objectives To identify patterns (clusters) of damage manifestations within a large cohort of juvenile SLE (jSLE) patients and evaluate the potential association of these clusters with a higher risk of mortality.

Methods This is a multicentre, descriptive, cross-sectional study of a cohort of 345 jSLE patients from the Spanish Society of Rheumatology Lupus Registry. Organ damage was ascertained using the Systemic Lupus International Collaborating Clinics Damage Index. Using cluster analysis, groups of patients with similar patterns of damage manifestations were identified.

Results Mean age at diagnosis 14.2±2.89, 88.7% were female and 93.4% were Caucasian. A total of 12 (3.5%) patients died, mean SLICC/ACR DI 1.27±1.63. Three damage clusters were identified:

Cluster 1 (72.7% of patients) showed damage in only 22.3% of patient, but no significant domain was involved.

Cluster 2 (14.5%) was featured by renal damage in 60% of patients, ocular damage in 54%, cardiovascular damage in 20% and gonadal failure in 14%, all significantly higher than clusters 1 and 3 ($p<0.001$). All patients scored for some damage in SLICC/ACR DI index, with a mean of 2.90±1.54 and mean affected domains of 1.86±0.93.

Cluster 3 (12.7%) was the only group with musculoskeletal damage (100%), clearly higher than clusters 1 and 2. All patients scored for some damage in SLICC/ACR DI index, with a mean of 2.66±1.87 and mean affected domains of 1.89±1.18.

The overall mortality rate of patients in clusters 2 and 3 was higher than in cluster 1 ($p<0.05$) and significantly higher in cluster 2 (2.2x times than cluster 3 and 5x times than cluster 1) (See table 1).

Conclusion In a large cohort of jSLE patients, we found one cluster with several damage domains involved that we consider clinically meaningful. Another cluster with important musculoskeletal damage manifestations and another cluster with no clinically significant damage at all were also found. These two clusters of jSLE with important clinical damage were found to be associated to higher rates of mortality, specially for the cluster involving renal, ocular, cardiovascular and gonadal domains. Physicians should pay special attention to the early prevention of damage in these particular subsets of patients.

PS3:47 MULTI-YEAR ANALYSIS OF PREVALENCE/OUTCOMES OF PULMONARY EMBOLISM IN SYSTEMIC LUPUS ERYTHEMATOSUS DISCHARGES FROM NATIONWIDE INPATIENT SAMPLE DATABASE & COMPARISON TO NATIONAL HOSPITAL DISCHARGE SURVEY

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Abstract PS3:47 Table 1 Outcomes

Variable	All Patients	PE	No PE	OR	p-Value
Inpatient Mortality	6132 (2%)	226 (6%)	5906 (2%)	2.99 (CI 2.56 – 3.49)	<0.001
Moderate to severe disability at discharge	77904 (26%)	1184 (31%)	76720 (26%)	1.26 (CI 1.16 – 1.37)	<0.001
Variable	**All Patients**	**PE**	**No PE**	**Co-efficient**	**p-Value**
LOS Median (IQR), Days	4	6	4	2.91 (CI 2.54 – 3.27)	<0.001
Total Charges ($10,000) Median (IQR)	23100	34900	22900	1.94 (CI 1.59 – 2.29)	<0.001
Data are presented as Number of patients (%) or Median (± IQR).					
Abbreviations: OR = Odds Ratio (95% Confidence Intervals (CI)); LOS = Length of stay; PE = Pulmonary Embolism; IQR = Interquartile range					