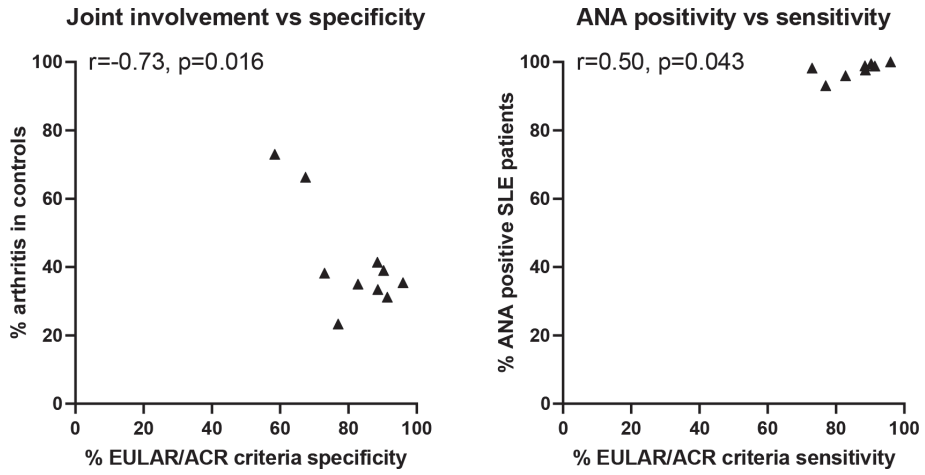

Abstract 1301 Figure 1

found that the specificity of joint involvement was 90.9%, but would drop to 57.6% if the attribution rule was not applied.[3] The attribution rule states that only those items should be counted towards classification that have no alternative explanation more likely than SLE. The new criteria have been externally validated in a number of studies. From many of the external validation studies, it is not clear whether this attribution rule was followed

Methods A literature search was performed for „lupus criteria'. Titles and abstracts were screened for studies that (i) referred to the EULAR/ACR criteria (even if using different terms) and (ii) indicated sensitivity and/or specificity estimates. The association between criteria specificity and frequency of joint involvement in the non-SLE control group and association between ANA positivity and criteria sensitivity were evaluated.

Results Operating characteristics of the SLE classification criteria have been evaluated in 19 studies. The external validation studies reported a sensitivity range of 84.8-97.6% and specificity range of (58.4-97.3%) (table 1).

Specificity was evaluated in 14 studies. In 3 of the studies appropriate use of the attribution rule was apparent. One study was excluded for focusing on neuropsychiatric manifestations. For the remaining 10 populations, there was a significant negative correlation between specificity and joint disease in the non-SLE control population. ($r=-0.73$, $p=0.016$), as depicted in figure 1 (left panel). Sensitivity estimates are reported in 19 studies, and the percentage of ANA positive SLE patients was reported for 17 of these. There was a positive correlation between ANA positivity and criteria sensitivity ($r=0.50$, $p=0.043$). (figure 1, right panel)

Conclusions Specificity of the EULAR/ACR criteria is dependent on the correct use of the attribution rule. Higher percentages of patients with joint involvement in the non-SLE control populations is associated with a lower EULAR/ACR criteria specificity. Since joint involvement is particularly vulnerable to not using attribution, this suggests that the lower specificity in some external validation studies in part is due to not fully applying the attribution rule. Sensitivity was high throughout the analyzed studies. It is therefore crucial to differentiate between classification and diagnosis and keep in mind that not fulfilling SLE classification criteria is no valid argument against diagnosing SLE in an individual patient.

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1302 UTILIZATION OF A CLINICAL DATA RESEARCH NETWORK TO ASSESS SYSTEMIC LUPUS INTERNATIONAL COORDINATING CLINICS

Noah Forrest, Kathryn Jackson, Al'ona Furmanchuck, Anika Ghosh, Jennifer Pacheco, Vesna Mitrovic, Abel Kho, Rosalind Ramsey-Goldman*, Theresa Walunas. *Northwestern University Feinberg School of Medicine*

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Background SLE, characterized by a heterogenous clinical phenotype, may present differently over time and between patients, creating challenges for identification and treatment of individuals seen at multiple facilities. Clinical data research networks (CDRN) aim to pool electronic health records (EHR) to provide more complete clinical information for patients shared across care centers. We determined whether algorithms to identify Systemic Lupus International Coordinating Clinics (SLICC) classification criteria attributes, using structured EHR data, could be applied to a CDRN to describe people with SLE.

Methods Published algorithms to identify SLICC classification criteria were adapted to the PCORnet Common Data Model used by the Chicago Area Patient Centered Outcomes Research Network (CAPriCORN). Initial patient selection required satisfying $\geq$1 criteria from the SLICC classification criteria as determined by diagnosis (ICD-9/10), procedure (CPT), medication (RX-NORM) and lab codes (LOINC) identified 1,231,130 unique patients. Next, persons with and without SLE were defined by 3+ or 0 instances of a SLE diagnosis by ICD 9/10 code, and the rates of each SLICC criterion was compared using Pearson Chi-squared test at the 95% confidence level. Patient records were assessed for the presence of SLICC criteria and whether they satisfied one SLICC rule for 'Definite SLE' fulfilling 4 total criteria with at least one from the clinical and immunologic domains.

Results The attribute identification frequency of SLICC criteria are represented in table 1. We identified 6,488 persons $\geq$ 3

Abstract 1302 Table 1 SLICC Classification Criteria Attribute Identification Rates

Criterion	All Patients	No SLE Diagnoses	≥3 SLE Diagnoses	p (No SLE vs. ≥3)
Oral Ulcer	26079 (2.1%)	25760 (2.1%)	227 (3.5%)	8.45E-14
Alopecia	30092 (2.5%)	29598 (2.5%)	327 (5%)	4.03E-40
SLICC Neurological	214984 (18%)	212624 (18%)	1462 (23%)	2.78E-24
Arthritis	30693 (2.5%)	29949 (2.5%)	442 (6.8%)	1.82E-107
Serositis	87479 (7.2%)	85870 (7.1%)	1133 (17%)	8.83E-225
Acute Cutaneous Lupus	3644 (0.3%)	2062 (0.17%)	1256 (19%)	<2.23e-308
Chronic Cutaneous Lupus	2704 (0.22%)	1221 (0.1%)	1141 (18%)	<2.23e-308
SLICC Renal	127890 (11%)	125377 (10%)	1866 (29%)	<2.23e-308
Thrombocytopenia	77681 (6.4%)	76313 (6.3%)	928 (14%)	1.02E-149
Leukopenia	808840 (67%)	800966 (67%)	4989 (77%)	1.56E-68
Hemolytic Anemia	17123 (1.4%)	16672 (1.4%)	314 (4.8%)	1.71E-121
Antinuclear Antibodies	28842 (2.4%)	26257 (2.2%)	1715 (26%)	<2.23e-308
Anti-Dsdna Antibodies	22867 (1.9%)	19136 (1.6%)	2706 (42%)	<2.23e-308
Anti-Sm Antibodies	1473 (0.12%)	936 (0.078%)	388 (6%)	<2.23e-308
Antiphospholipid Antibodies	3774 (0.31%)	3139 (0.26%)	458 (7.1%)	<2.23e-308
Direct Coombs Test	809 (0.067%)	691 (0.057%)	91 (1.4%)	<2.23e-308
Complement	9696 (0.8%)	6707 (0.56%)	2401 (37%)	<2.23e-308

SLE diagnostic codes: 1,201,999 persons with no diagnosis codes for SLE. All criteria items occurred significantly more often in persons with SLE compared with those without SLE and the greatest differences in SLICC attributes identified: Acute Cutaneous: 19% v. 0.17%; Chronic Cutaneous: 18% vs. 0.1%, Renal: 29% vs. 10%, Thrombocytopenia: 14% vs. 6.3%,, Antinuclear Antibodies: 26% vs. 2.2%, Anti-dsDNA Antibodies: 42% vs. 1.6%, Anti-Sm Antibodies: 6% vs. 0.08%, Antiphospholipid Antibodies: 7.1% vs. 0.26%, Low complement: 37% vs. 0.6%, Direct Coombs Test: 1.4% vs. 0.06%. There were 2770 persons (43%) among those ≥3 SLE diagnoses and 9770 persons (0.81%) without SLE satisfying the SLICC definition of 'Definite SLE'.

Conclusions The results demonstrate identification of all SLICC classification criteria attributes in the CAPriCORN data set, an increased rate of attribute identification for all SLICC criteria, and an increased rate of definite SLE classification via SLICC in persons with ≥3 SLE diagnostic codes compared to those without SLE diagnostic codes. This suggests that SLE presentation can be characterized in CDRN data.

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1303 THE NEW EULAR/ACR 2019 SLE CLASSIFICATION CRITERIA: A PREDICTOR OF LONG-TERM OUTCOMES

Laura Whittall-Garcia, Murray B Urowitz*, Dafna D Gladman, Jiandong Su, Zahi Touma, Sindhu R Johnson. *University of Toronto, University Health Network, Toronto, Ontario, Canada*

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Background We recently demonstrated that a EULAR/ACR classification Criteria score ≥ 20 predicts a higher disease activity throughout the first 5 years after diagnosis. Given that disease activity is associated with damage accrual and mortality, we aimed to determine the ability of a EULAR/ACR score ≥20 to predict these long-term outcomes.

Methods Inception SLE patients recruited in the first 12 months after diagnosis were included.

For each patient a EULAR/ACR score was calculated based on the baseline clinical and laboratory information. The baseline information was obtained from the first 2 visits.

Patients were divided into 2 groups depending on their EULAR/ACR score <20 or ≥20. In order to determine the ability of a EULAR/ACR ≥20 to predict damage accrual and mortality the following outcomes were assessed:

1. Time to first damage accrued: Defined as the first increase in SLICC/ACR Damage Index from 0 to ≥ 1 within the first 10 years after SLE diagnosis, with death as a competing risk. 57 patients with damage at entry were excluded
2. Time to first increase in damage: Defined as any increase in the SLICC/ACR Damage Index within the first 10 years after SLE diagnosis, with death as a competing risk.
3. Mean SDI score at the 10th year of follow–up.
4. Time to death within the first 10 years after SLE diagnosis
5. Multivariable Cox Proportional regression was performed to calculate the risk and possible confounders.

Results A total of 867 inception patients were included. Table 1 shows baseline clinical characteristics of the cohort.

The proportion of patients who accrued damage within the first 10 years and the mean SDI at 10 years were significantly higher in the group of ≥ 20. When looking at the specific domains in SDI, the group with a score ≥ 20 at 10 years of follow-up had significantly more renal damage and a higher percentage of diabetes (table 2).

On multivariable regression analysis, after adjusting for age and ethnicity, a score ≥ 20 continued to significantly predict damage accrual, HR 1.28 (1.04-1.57), p=0.02. When we excluded patients who had damage at enrollment the results were similar (table 3).

Sixty-eight (7.8%) of patients died within the first 10 years of follow-up, the percent of deaths was higher in the group

Abstract 1303 Table 1 Demographic characteristics in our cohort at baseline. Values are expressed as mean ± SD or n (%)

Variables	EULAR/ACR Score < 20, N = 415	EULAR/ACR Score ≥ 20, N = 452	P value
Race			
Caucasian	316 (76.1)	262 (58.0)	**<0.001**
Black	42 (10.1)	81 (17.9)	**0.002**
Chinese	20 (4.8)	52 (11.5)	**<0.001**
Age, years	38.1 ± 15.1	34.5 ± 13.1	**<0.001**
Disease duration, years	0.2 ± 0.3	0.2 ± 0.3	0.86
SLEDAI-2K score	6.3 ± 5.4	12.2 ± 8.9	**<0.001**
SDI[a] score	0.1 ± 0.4	0.1 ± 0.4	0.13
SDI[a] > 0	23 (5.5)	34 (7.5)	0.24
Treatment			
GC[b] use	241 (58.1)	374 (82.7)	**<0.001**
Immunosuppressive use	83 (20.0)	166 (36.7)	**<0.001**
Antimalarial use	222 (53.5)	247 (54.6)	0.73

[a]SLICC/ACR Damage Index.
[b]Glucocorticoid.