Descriptive statistics (frequencies, means and standard deviations) were calculated using SPSS version 12.

Results A total of 141 patients (table 1), who fulfilled the SLICC 2012 Classification Criteria for SLE were enrolled in the study. The mean age of the population was 39.8 with a standard deviation of 13.8. 136 patients (96.5%) were female. Analysis of the immunologic abnormalities revealed a positive ANA test in 139 (99.3%), and a positive anti-dsDNA test in 80 (57.6%) of the patients, for whom results were available. Synovitis involving two or more joints was reported by 120 (85.1%) of the patients, followed by acute cutaneous lupus 57 (40.4%) and non-scarring alopecia 55 (39.0%). Of the 32 patients with renal involvement, 28 patients had a result for an anti-dsDNA. test, of which 22 (78.6%) were positive.

Conclusion The female to male ratio was comparable to other Asian populations. Our study population had similar clinical and immunologic findings as compared to published literature. A significant proportion of patients who had renal involvement had a positive Anti-dsDNA test. Future longitudinal studies would allow causal inferences to be made.

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CS-18 CEREBROVASCULAR EVENTS IN SYSTEMIC LUPUS ERYTHEMATOSUS: RESULTS FROM AN INTERNATIONAL, INCEPTION COHORT STUDY

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Background Vascular disease, including involvement of the cerebral circulation, is a frequent cause of morbidity and mortality in SLE. Cerebrovascular events (CerVEs) are reported in 5–18% of patients in previous cohort studies. Potential etiologies include procoagulant factors due to SLE (e.g. antiphospholipid antibodies, endothelial activation and vasculitis) and factors which promote accelerated atherosclerosis (e.g. hypertension, hyperlipidemia and SLE itself). The relative contribution of these factors and the outcome of clinical CerVEs in a general lupus population have not been well documented.

Objective To determine the frequency, associations and outcomes of cerebrovascular events (CerVEs) in a multi-ethnic/racial, prospective, SLE disease inception cohort.

Methods Patients were assessed annually for 19 neuropsychiatric (NP) events including 5 types of CerVEs: (i) Stroke; (ii) Transient ischemia; (iii) Chronic multifocal ischemia; (iv) Subarachnoid/intracranial hemorrhage; (v) Sinus thrombosis. Global disease activity (SLEDAI-2K), SLICC/ACR damage index (SDI) and SF-36 scores were collected. Time to event, linear and logistic regressions and multi-state models were used as appropriate.

Results Of 1,826 SLE patients, 88.8% were female, 48.8% Caucasian, mean±SD age 35.1±13.3 years, disease duration 5.6±4.2 months and follow-up 6.6±4.1 years. CerVEs were the fourth most frequent NP event: 82/1,826 (4.5%) patients had 109 events, 103/109 (94.5%) were attributed to SLE and 44/109 (40.4%) were identified at enrollment. The predominant events were stroke [60/109 (55.0%)] and transient ischemia [28/109 (25.7%)]. CerVEs were associated with other NP events attributed to SLE (HR (95% CI): (3.16; 1.73–5.75) ($p<0.001$), non-SLE NP (2.60; 1.49–4.51) ($p<0.001$), African ancestry at US SLICC sites (2.04; 1.01–4.13) ($p=0.047$) and organ damage ($p=0.041$). Lupus anticoagulant increased the risk of first stroke and sinus thrombosis [2.23 (1.11, 4.45) $p=0.024$] and TIA [3.01 (1.15, 7.90) $p=0.025$]. Physician assessment indicated resolution or improvement in the majority but patients reported sustained reduction in SF-36 summary and subscale scores following CerVEs ($P<0.0001$).

Conclusion CerVEs, the fourth most frequent NP event in SLE, are usually attributable to lupus. In contrast to good physician reported outcomes, patients report a sustained reduction in health-related quality of life following CerVEs.

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CS-19 HEART FAILURE HOSPITALIZATIONS AMONG SLE AND DIABETES MELLITUS PATIENTS COMPARED TO THE GENERAL U.S. MEDICAID POPULATION

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Background Both SLE and diabetes mellitus (DM) patients have elevated risks of atherosclerotic cardiovascular disease. Risk of heart failure (HF), an end-stage of cardiovascular disease and a leading cause of hospitalization in the U.S., is also elevated among DM patients, but has not been well studied in SLE. We investigated rates and risks of HF hospitalization among SLE patients compared to age- and sex-matched DM and general Medicaid patients.

Methods We used Medicaid Analytic eXtract (MAX) data, containing billing claims for Medicaid patients from the 29 most populated US states 2007–2010. We identified SLE and DM patients, ages 18–65, using ≥3 ICD-9 codes for SLE or DM, each separated by ≥30 days. Index date was 3rd diagnosis code. We matched each SLE patient at index date to 2 DM patients and 4 general Medicaid patients without SLE or DM, by age at index date and sex. Baseline period was 6 months of continuous Medicaid enrollment prior to index date for all patients. Subjects were followed until death, disenrollment or end of follow-up. We used ICD-9 codes to identify HF hospital discharge diagnosis and calculated rates of first HF hospitalization event per 1000 person-years for each cohort. Cox proportional hazard models, accounting for competing risk of death, estimated hazard ratios (HR) for first HF hospitalization events. In a secondary analysis, we excluded those with baseline HF.

Results 40,212 SLE patients were matched to 80,424 DM and 1 60 848 general patients. In all cohorts, 92% were female, and mean age was 40.3 (±12.1) years. Mean follow-up was 1.8 (±1.1) years for SLE, 1.8 (±1.1) years for DM, and 1.6 (±1.2) years for general patients. Baseline CVD was present

in 18% of SLE, 13% of DM and 1% of non-SLE, non-DM cohorts, and baseline HF in 6% of SLE, 5% of DM and <1% of non-SLE/non-DM patients. HF hospitalization rates per 1,000-person years were similar in SLE and DM, both higher than the general population (table 1). Adjusted HRs for first HF hospitalizations were higher among DM and SLE patients compared to non-SLE, non-DM patients. When patients with baseline HF were excluded, HRs for first HF hospitalizations were similar in SLE and DM.

Conclusion SLE and DM patients had significantly higher rates of HF hospitalization than age- and sex-matched general Medicaid patients. The risk of HF hospitalization was >2 x higher among both SLE and DM patients, with important implications for improving care for SLE.

Abstract CS-19 Table 1 Rates and multivariable hazard ratios for hospitalizations for HF* among SLE patients and age- and sex-matched DM patients, compared to the general (non-SLE, non-DM) medicaid population, 2007–2010

Cohort†	Events	Person-years	Rate‡ (95% CI)	HR§ (95% CI)	
				Including all patients	Excluding patients with baseline HF
General Medicaid	620	2 50 281	2.5 (2.3–2.7)	1.0 (ref)	1.0 (ref)
SLE	837	73 299	11.4 (10.7–12.2)	**2.4 (2.2–2.7)**	**2.5 (2.3–2.8)**
Diabetes Mellitus	1675	1 45 692	11.5 (11.0–12.1)	**4.0 (3.6–4.3)**	**2.7 (2.4–2.9)**

*HF: Heart failure events by hospitalization ICD-9 diagnosis codes 402.01, 402.11, 402.91, 404.01, 404.11, 404.91, 404.03, 404.13, 404.93, and 428.xx, but excluding 398.91 rheumatic heart disease (Chen J, Circulation, 2013).
†Cohort: SLE cohort defined as>3 SLE ICD-9 codes (710.0), each separated by >30 days; DM cohort defined as>3 ICD-9 codes (249.XX, 250.XX, 357.2, 362.01–362.06, 366.41), 1:2 matched by age, sex to SLE cohort; General Medicaid cohort defined as any non-SLE, non-DM ICD-9 code on same date as SLE index date, 1:4 matched by age, and sex to SLE cohort
‡Rate: Rate of first HF hospitalization events per 1000 person-years of follow up
§HR: Hazard ratio for first HF hospitalization event adjusted for age, sex, race/ethnicity, US region of residence, zip-code level socioeconomic status, Charlson comorbidity index; Two separate models: 1) including all patients, 2) excluding patients who had baseline HF diagnosis

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CS-20 A SYSTEMATIC REVIEW OF EMPLOYMENT OUTCOMES OF ADULTS WITH CHILDHOOD-ONSET SYSTEMIC AUTOIMMUNE RHEUMATIC DISEASES

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Background With improved survival, most patients with childhood-onset systemic autoimmune rheumatic diseases (ChildSARDs) now live to become adults. Employment is a major milestone of independence in adulthood and has obvious impacts on socioeconomic attainment. Employment is associated with access to health insurance and healthcare. Therefore, employment is an important outcome. We aim to systematically review employment outcomes of adults diagnosed with ChildSARDs.

Methods Systemic autoimmune rheumatic diseases (SARDs) include: systemic lupus erythematosus (SLE), inflammatory myositis, Sjogren's syndrome, systemic sclerosis, and systemic vasculitides. We developed a search strategy with an academic librarian and searched MEDLINE, Embase, and Scopus for full-length English articles (January 1990 and November 2017). If a study contained ChildSARDs and adult-onset SARD adults, we contacted the authors for clarification on the number of ChildSARD patients and their employment outcomes. We extracted information on study design, employment outcome measures, prognostic factors, and confounders using a standard data collection form. Study quality was graded independently by 2 reviewers using the Quality in Prognosis Studies (QUIPS) risk-of-bias tool.

Results Of 2109 abstracts, 5 publications from 4 studies (4 SLE, 1 juvenile dermatomyositis) were included. There were 296 patients (257 SLE, 39 JDM); study participants had a mean age of 23.3–29 years with a mean disease duration of 7.6–15 years. Only 1 study was longitudinal (≥3 repeated outcome measurements). 80% were from North America. No study made comparisons of the employment outcomes of patients with the general population. Moderate to high risks-of-bias were commonly found in the domains of study population (100%), prognostic factor measurement (80%), and confounding (80%). 47% of the patients were working (full/part-time), 21% were studying and the remaining 32% were not working. Two studies assessed work productivity, and one measured work characteristics. Income was reported in two studies. Prognostic factors for employment identified in 3 studies were generally either disease characteristics or work-related characteristics.

Conclusion There is scarce information on employment outcomes of ChildSARDs adults in literature. There was little information on work characteristics and productivity; prognostic factor testing was limited. Important study domains, such as population and confounding, are at moderate-high risk-of-bias. Future studies should aim to study more ChildSARD diseases. Careful attention should be paid to study design, and investigators should collect more comprehensive information on employment beyond work status, compare patient outcomes to the general population, and test for the effects of both sociodemographic and disease related factors within the same models.

CS-21 A SYSTEMATIC REVIEW OF PROGNOSIS STUDIES IN CHILDHOOD-ONSET SYSTEMIC AUTOIMMUNE RHEUMATIC DISEASES

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Background With tremendously improved survival, many adults live with childhood-onset (onset <18 years) systemic autoimmune rheumatic diseases (ChildSARDs) which are systemic lupus erythematosus (SLE), Sjogren's syndrome, idiopathic inflammatory myositis (IIM), systemic sclerosis, and systemic vasculitides. Little is known about ChildSARD outcomes in adulthood. We systematically reviewed prognosis studies performed on ChildSARD adults to summarize the