CEREBROVASCULAR EVENTS IN SYSTEMIC LUPUS

44/109 (40.4%) were identified at enrollment. The had 109 events, 103/109 (94.5%) were attributed to SLE and the fourth most frequent NP event: 82/1,826 (4.5%) patients 5.6±4.2 months and follow-up 6.6±4.1 years. CerVEs were Caucasian, mean±SD age 35.1±13.3 years, disease duration ris would allow causal inferences to be made. Future longitudinal stud- ment had a positive Anti-dsDNA test. Future longitudinal stud- Asian populations. Our study population had similar clinical and immunologic findings as compared to published literature. A significant proportion of patients who had renal involve- and immunologic findings as compared to published literature. A significant proportion of patients who had renal involve- had a positive Anti-dsDNA test. Future longitudinal stud-ies would allow causal inferences to be made. Acknowledgement The authors will like to thank all doctors and clerical staff who worked in the Rheumatology Unit dur- ing the study period, for their assistance with data collection. Special thanks to Mr. Darien Wong and Mr. Jared Ramkissoon who assisted with the database. Thanks to Dr. Peter Poon King and all consultants at the SWRHA.

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. antiphos- pholipid antibodies, endothelial activation and vasculitis) and factors which promote accelerated atherosclerosis (e.g. hyper- tension, hyperlipidemia and SLE itself). The relative contribu- tions 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 anticoag- ulant 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 reduc- tion in health-related quality of life following CerVEs.

Acknowledgements This work is presented on behalf of the Systemic Lupus International Collaborating Clinics (SLICC) and was funded in part by a grant from the Canadian Institutes of Health Research (MOP-88526) to Dr. Hanly.

Abstracts

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

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10.1136/lupus-2018-lsm.53

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 contributions 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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Abstracts

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

K Kain Gu, Tania Gottschalk, Lily Siok Hoon Lim*. University of Manitoba, Winnipeg, Canada; *Children’s Hospital Research Institute of Manitoba, Winnipeg, Canada; #Rady Faculty of Health Sciences, University of Manitoba

**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, and test for the effects of confounding (80%). 47% of the participants 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.

Acknowledgements This study was funded by NIH K24 AR066109 and R01 AR057327.

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

Kaien Gu, Annaliesse Tisseverasinghe, Carol Cooke, Lily Siok Hoon Lim*. University of Manitoba, Winnipeg, Canada; Department of Medicine, University of Manitoba; Rady Faculty of Health Sciences, University of Manitoba; Children’s Hospital Research Institute of Manitoba, Winnipeg, Canada

**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 (IM), 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

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

<table>
<thead>
<tr>
<th>Cohort</th>
<th>Events</th>
<th>Person-years</th>
<th>Rate‡ (95% CI)</th>
<th>HR§ (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>620</td>
<td>250 281</td>
<td>2.5 (2.3–2.7)</td>
<td>1.0 (ref)</td>
</tr>
<tr>
<td>Medicaid</td>
<td></td>
<td></td>
<td></td>
<td>1.0 (ref)</td>
</tr>
<tr>
<td>SLE</td>
<td>837</td>
<td>73 299</td>
<td>11.4 (10.7–12.2)</td>
<td>2.4 (2.2–2.7)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>1675</td>
<td>1 45 692</td>
<td>11.5 (11.0–12.1)</td>
<td>4.0 (3.6–4.3)</td>
</tr>
<tr>
<td>Mellitus</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*HF: Heart failure events by hospitalization ICD-9 diagnosis codes 420.01, 420.11, 420.91, 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). §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 with baseline HF diagnosis.