CS-07 ECONOMIC EVALUATION OF DAMAGE ACCRUAL IN AN INTERNATIONAL SLE INCEPTION COHORT

¹Ann E Clarke*, ²Ian N Bruce, ³Murray B Urowitz, ⁴John G Hanly, ⁵Juanita Romero-Diaz, ⁶Caroline Gordon, ⁷Sang-Cheol Bae, ⁸Sasha Bernatsky, ⁹Daniel J Wallace, ¹⁰Joan T Merrill, ¹¹David A Isenberg, ¹²Anisur Rahman, ¹³Ellen M Ginzler, ¹⁴Michelle Petri, ¹⁵MA Dooley, ¹⁶Paul Fortin, ¹⁷Dafna D Gladman, ¹⁸Jorge Sanchez-Guerrero, ¹⁹Kristjan Steinsson, ²⁰Rosalind Ramsey-Goldman, ²¹Munther A Khamashta, ²²Cynthia Aranow, ²³Graciela S Alarcón, ²⁴Susan Manzi, ²⁵Ola Nived, ²⁶Asad A Zoma, ²⁷Ronald F van Vollenhoven, ²⁸Manuel Ramos-Casals, ²⁹Guillermo Ruiz-Irastorza, ³⁰S Sam Lim, ³¹Kenneth C Kalunian, ³²Murat Inanc, ³³Diane L Kamen, ³⁴Christine A Peschken, ³⁵Soren Jacobsen, ³⁶Anca Askanase, ³⁷Yvan St Pierre, ³⁸Li Su, ³⁹Vernon Farewell. ¹Division of Rheumatology, Cumming School of Medicine, University of Calgary, Alberta, Canada; ²Arthritis Research UK Epidemiology Unit, Institute of Inflammation and Repair, Manchester Academic Health Sciences Centre, The University of Manchester, Manchester, UK; and NIHR Manchester Musculoskeletal Biomedical Research Unit, Central Manchester University Hospitals NHS Foundation Trust, Manchester Academic Health Science Centre; ³Centre for Prognosis Studies in the Rheumatic Diseases, Toronto Western Hospital and University of Toronto, Ontario, Canada; ⁴Division of Rheumatology, Department of Medicine and Department of Pathology, Queen Elizabeth II Health Sciences Centre and Dalhousie University, Halifax, Nova Scotia, Canada; ⁵Instituto Nacional de Ciencias Medicas y Nutrición, Mexico City, Mexico; ⁶Rheumatology Research Group, School of Immunity and Infection, College of Medical and Dental Sciences, University of Birmingham, Birmingham, UK; ⁷Department of Rheumatology, Hanyang University Hospital for Rheumatic Diseases, Seoul, Korea; ⁸Divisions of Rheumatology and Clinical Epidemiology, McGill University Health Centre; Montreal, Quebec, Canada; ⁹Cedars-Sinai/David Geffen School of Medicine at UCLA, Los Angeles, CA, USA; ¹⁰Department of Clinical Pharmacology, Oklahoma Medical Research Foundation, Oklahoma City, OK, USA; ¹¹Centre for Rheumatology, Department of Medicine, University College London, UK; ¹²Department of Medicine, SUNY Downstate Medical Center, Brooklyn, NY, USA; ¹³Division of Rheumatology, Johns Hopkins University School of Medicine, Baltimore, MD, USA; ¹⁴Thurston Arthritis Research Center, University of North Carolina, Chapel Hill, NC, USA; ¹⁵Division of Rheumatology, Centre Hospitalier Universitaire de Québec et Université Laval, Quebec City, Canada; ¹⁶Center for Rheumatology Research, Landspítali University hospital, Reykjavik, Iceland; ¹⁷Northwestern University and Feinberg School of Medicine, Chicago, IL, USA; ¹⁸Lupus Research Unit, The Rayne Institute, St Thomas' Hospital, King's College London School of Medicine, UK, London, UK; ¹⁹Feinstein Institute for Medical Research, Manhasset, NY, USA; ²⁰Department of Medicine, University of Alabama at Birmingham, Birmingham, AL, USA; ²¹Allegheny Health Network, Pittsburgh, PA, USA; ²²Department of Rheumatology, University Hospital Lund, Lund, Sweden; ²³Lanarkshire Centre for Rheumatology, Hairmyres Hospital, East Kilbride, UK; ²⁴University of Amsterdam, Rheumatology and Immunology Center, Amsterdam, Noord-Holland, NL; ²⁵Josep Font Autoimmune Diseases Laboratory, IDIBAPS, Department of Autoimmune Diseases, Hospital Clínic, Barcelona, Spain; ²⁶Autoimmune Diseases Research Unit, Department of Internal Medicine, BioCruces Health Research Institute, Hospital Universitario Cruces, University of the Basque Country, Barakaldo, Spain; ²⁷Emory University School of Medicine, Division of Rheumatology, Atlanta, Georgia, USA; ²⁸UCSD School of Medicine, La Jolla, CA, USA; ²⁹Division of Rheumatology, Department of Internal Medicine, Istanbul Medical Faculty, Istanbul University, Istanbul, Turkey; ³⁰Medical University of South Carolina, Charleston, South Carolina, USA; ³¹University of Manitoba, Winnipeg, Manitoba, Canada; ³²Department of Rheumatology, Rigshospitalet, Copenhagen University Hospital, Copenhagen, Denmark; ³³Hospital for Joint Diseases, NYU, Seligman Centre for Advanced Therapeutics, New York NY; ³⁴Research Institute of McGill University Health Centre, Montreal, Quebec, Canada; ³⁵MRC Biostatistics Unit, Institute of Public Health, University Forvie Site, Cambridge, UK

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Background Little is known about the association of health-care costs with damage accrual in SLE. We describe the costs associated with damage progression using multi-state modeling.

Methods Patients fulfilling the revised ACR Classification Criteria for SLE from 32 centres in 11 countries were enrolled in the Systemic Lupus International Collaborating Clinics (SLICC) inception cohort within 15 months of diagnosis. Annual data on demographics, SLE disease activity (SLEDAI-2K), damage (SLICC/ACR Damage Index [SDI] if ≥ 6 months from diagnosis), hospitalizations, medications, dialysis, and utilization of selected medical/surgical procedures were collected. Annual health resource utilization was costed using 2017 Canadian prices. Annual costs associated with SDI states were obtained from multiple regressions adjusting for age, sex, race/ethnicity, and disease duration. As there were relatively few transitions to SDI states 5–11, these were merged into a single SDI state. Five and 10 year cumulative costs were estimated by multiplying annual costs associated with each SDI state by the expected duration in each state, which was forecasted using a multi-state model and longitudinal SDI data from the SLICC Inception Cohort (Bruce *IN et al. Ann Rheum Dis* 2015;74:1706–13). Future costs were discounted at a yearly rate of 3%.

Results 1676 patients participated, 88.7% female, 49.2% Caucasian, mean age at diagnosis 34.6 years (SD 13.4), mean disease duration at enrollment 0.5 years (range 0–1.3 years), and mean follow up 7.8 years (range 0.6–16.9 years). Health resource utilization and annual costs (after adjustment using regression) were markedly higher in those with higher SDIs (SDI=0, annual costs \$1847, 95% CI \$1120 to \$2574; SDI ≥ 5 , annual costs \$26 772, 95% CI \$19 631 to \$33 813). At SDI ≤ 2 , hospitalizations and medications accounted for 97.1% of direct costs, whereas at SDI ≥ 3 , dialysis was responsible for 55.0%.

Five and 10 year cumulative costs stratified by baseline SDI were calculated by multiplying the annual costs associated with each SDI by the expected duration in that state. Five and 10 year costs were greater in those with the highest SDIs at baseline (table 1).

Conclusions Patients with the highest baseline SDIs incur annual costs and 10 year cumulative costs that are at least 10-fold higher than those with the lowest baseline SDI. By estimating the expected duration in each SDI state and incorporating annual costs, disease severity at presentation can be used to predict future healthcare costs, critical knowledge for cost-effectiveness evaluations of novel therapies.

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Abstract CS-07 Table 1 Predicted 5 and 10-year cumulative costs stratified by baseline SDI

Baseline SDI State	Healthcare Costs, Mean, 95% CI 2017 Canadian \$			
	5 Year Cumulative Costs	Relative Cost	10 Year Cumulative Costs	Relative Cost
0	9 692 (5 834, 13 551)	1	21 986 (13 454, 30 518)	1
1	21 788 (15 380, 28 197)	2.2	54 813 (38 989, 70 637)	2.5
2	34 825 (25 564, 44 087)	3.6	88 361 (64 498, 112 223)	4.0
3	59 254 (43 746, 74 762)	6.1	1 36 068 (99 690, 172 446)	6.2
4	93 617 (68 104, 119 129)	9.7	1 93 549 (140 889, 246 208)	8.8
≥ 5	1 24 998 (91 636, 158 360)	12.9	2 30 859 (168 871, 292 846)	10.5