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EVALUATION OF SARS-COV-2 IGG ANTIBODY REACTIVITY IN A MULTI-RACIAL/ETHNIC COHORT OF PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

¹Amit Saxena*, ¹Allison Guttman*, ¹Mala Masson, ²Mimi Y Kim, ¹Rebecca H Haberman, ¹Rochelle Castillo, ¹Jose U Scher, ¹Kristina K Deonarine, ¹Alexis J Engel, ¹H Michael Belmont, ¹Ashira D Blazer, ¹Jill P Buyon, ¹Ruth Fernandez-Ruiz*, ¹Peter M Izmirly*.

¹Division of Rheumatology, Department of Medicine, New York University School of Medicine, New York, NY; ²Division of Biostatistics, Department of Epidemiology and Population Health, Albert Einstein College of Medicine, New York, NY; ³NYU Langone Health, New York, NY

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Background Patients with Systemic Lupus Erythematosus (SLE) represent a unique population at risk for COVID-19 due to underlying immune abnormalities and regular use of immunosuppressant medications. This study was initiated to evaluate for the presence of SARS-CoV-2 IgG antibodies in SLE patients with and without prior COVID-19-related symptoms or COVID-19 RT PCR testing.

Methods A total of 329 patients with SLE from two cohorts, one serially monitored for COVID-19 in Spring 2020 (the Web-based Assessment of Autoimmune, Immune-Mediated and Rheumatic Patients (WARCOV) and one undergoing routine surveillance (NYU Lupus Cohort) were tested for SARS-CoV-2 IgG via commercially available immunoassays processed through hospital or outpatient laboratories between April 29, 2020 and February 9, 2021.

Results Overall, 16% of 329 patients had a reactive SARS-CoV-2 IgG antibody test. Seropositive patients were more likely to be Hispanic. Other demographic variables, lupus-specific factors and immunosuppressant use were not associated with reactivity. Of the 29 patients with prior RT-PCR confirmed COVID-19, 83% developed an antibody response despite 62% being on immunosuppressants. Six percent of patients who had symptoms suspicious for COVID-19 but negative concurrent RT-PCR testing developed an antibody response. Twenty-three percent of patients who had COVID-19-related symptoms but no RT-PCR testing and 5% of patients who had no symptoms of COVID-19 developed an antibody response. Among patients initially SARS-CoV-2 IgG positive, the majority maintained reactivity serially. In COVID-19-confirmed patients high percentages had antibody positivity beyond 30 weeks from disease onset, 88% up to 10 weeks, 83% up to 20 weeks, and 80% up to 30 weeks.

Conclusions Most patients with SLE and confirmed COVID-19 were able to produce a serologic response despite use of a variety of immunosuppressants. These findings provide reassurances regarding the efficacy of humoral immunity and possible reinfection protection in patients with SLE.

Abstract 1206 Figure 1 SARS-CoV-2 IgG in SLE

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1300 – SLE diagnosis

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EFFECT OF ATTRIBUTION ON EXTERNAL VALIDATION OF THE EULAR/ACR SLE CLASSIFICATION CRITERIA

¹Nicolai Leuchten, ²Karen Costenbader, ³Thomas Dörner, ⁴Sindhu R Johnson, ¹Martin Aringer*. ¹University Medical Center and Faculty of Medicine TU Dresden, Dresden, Germany; ²Brigham and Women's Hospital, Harvard Medical School, Boston, MA, USA; ³Charité – Universitätsmedizin Berlin, Berlin, Germany; ⁴University of Toronto, Toronto, ON, Canada

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Background With their new structure of ever positive anti-nuclear antibodies (ANA) as an obligatory entry criterion and weighted specific criteria with a cut-off of ≥ 10 , the European League Against Rheumatism/American College of Rheumatology (EULAR/ACR) 2019 classification criteria for systemic lupus erythematosus (SLE) has a sensitivity of 96.1% and a specificity of 93.4% in the validation cohort.^{1,2} An analysis of the performance of the individual criteria items

Abstract 1301 Table 1

Publication	Population	EULAR/ACR criteria		Arthritis controls	ANA positive
		Sensitivity	Specificity		
Adamichou et al 2019	Early SLE	88.6%	97.3%	37.2%	93.6%
Aljaberi et al 2020	Pediatric SLE	84.8%	82.8% *	35%	96%
Aringer et al 2019 (1,2)(validation)	SLE	96.1%	93.4%	—	99.3%
Aringer et al (derivation)	SLE	98.0%	96%	—	99.6%
Batu et al 2020	Pediatric SLE	91.6%	88.5% *	41.4%	98.9%
Dahlström & Sjöwall 2019	SLE	93%	73% *	38.2%	98.2%
Gegenava et al 2019	NPSLE	87%	74%	16.7%	96.3%
Lee et al 2020	SLE	97.6%	91.4% *	31.2%	98.8%
Levinsky et al 2021	Pediatric SLE	96%	89% *	35.4%	100%
Ma et al 2020	Pediatric SLE	97.4%	98.4%	58%	100%
Petri et al 2020	SLE	90.8%	88.6% *	33.4%	97.7%
Rodrigues Fonseca et al 2019 (BL)	Pediatric SLE	89.3%	67.4% *	66.3%	NR
Rodrigues Fonseca et al (one year)	Pediatric SLE	95.1%	58.4% *	73%	NR
Rubio et al 2020	SLE	94.9%	NA	NA	96.3%
Smith et al 2021	Pediatric SLE	94%	77% *	23.3%	93.1%
Suda et al	SLE	92%	NA	NA	92%
Teng et al 2020	SLE	96.5%	90.3% *	39%	99.5%
Wang et al 2021	LN	95.2%	NA	37.2%	95.2%
Whittall Garcia et al 2021	SLE	95.7%	NA	35%	97.1%

Arthritis controls: % non-SLE control population with joint diseases, NR not reported, NA not applicable, * included into specificity analysis. LN lupus nephritis.