HERVs/LINEs expression in NK cells in patient with severe disease, and in CD4 cells in patients with dsDNA production (FDR $p<0.05$).

Conclusion HERVs/LINEs expression is associated with gene expression in a cell specific manner. Further, we demonstrated a strong association between HERVs/LINEs expression and clinical outcomes, particularly in CD19 cells, in SLE patients.

Clinical Research in SLE

607 IMPACT OF ANIFROLUMAB ON NEUROPSYCHIATRIC MANIFESTATIONS OF DEPRESSION AND SUICIDALITY IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

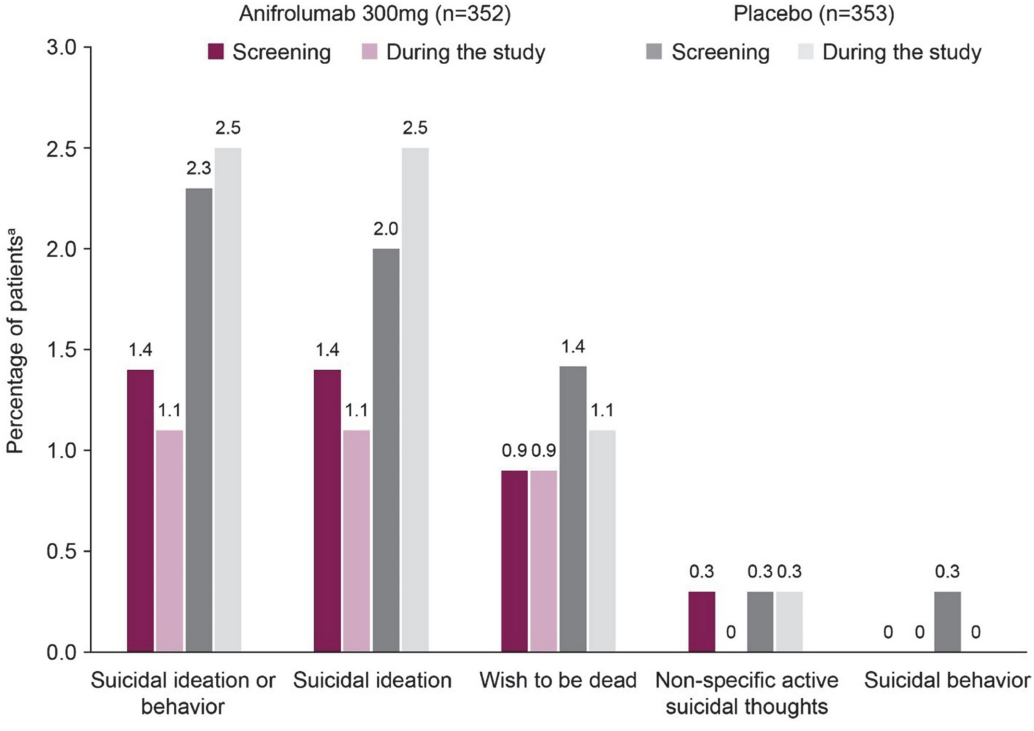
[1]Susan Manzi, [2]Catharina Lindholm, [3]Ihor Hupka, [4]Lijin (Jinny) Zhang, [5]Manish Shroff, [6]Gabriel Abreu, [7]Shanti Werther, [8]Raj Tummala. *[1]Lupus Center of Excellence, Autoimmunity Institute, Allegheny Health Network, Rheumatology, Pittsburgh, PA, USA; [2]Clinical Development, Late Respiratory and Immunology, BioPharmaceuticals RandD, AstraZeneca, Gothenburg, Sweden; [3]Clinical Development, Late Respiratory and Immunology, BioPharmaceuticals RandD, AstraZeneca, Warsaw, Poland; [4]Global Patient Safety, BioPharmaceuticals, RandD, AstraZeneca, Gaithersburg, MD, USA; [5]Global Patient Safety, Vaccines and Immune Therapy, RandD, AstraZeneca, Boston, MA, USA; [6]Biometrics, Late Respiratory and Immunology, BioPharmaceuticals RandD, AstraZeneca, Gothenburg, Sweden; [7]Global Patient Safety, Biopharmaceuticals, RandD, AstraZeneca, Gothenburg, Sweden; [8]Clinical Development, Late Respiratory and Immunology, BioPharmaceuticals RandD, AstraZeneca, Gaithersburg, MD, USA*

10.1136/lupus-2022-lupus21century.28

Background Neuropsychiatric (NP) disease is more common in patients with systemic lupus erythematosus (SLE) than in the general population.[1] Increased incidence of NP events (depression and suicidality) has been reported with biologic therapies, including SLE therapies.[2] Depression and suicidality were evaluated in patients with SLE treated with anifrolumab, a type I interferon receptor antibody, in the TULIP-1 and TULIP-2 trials.[3,4] This analysis aims to understand the impact of anifrolumab treatment on NP manifestations (depression and suicidality) in patients with SLE relative to standard therapy using pooled data from the TULIP trials.

Methods TULIP-1/-2 were randomized, placebo-controlled, 52-week trials of intravenous anifrolumab every 4 weeks in patients with moderate to severe SLE despite standard therapy.[3,4]Patients with active severe or unstable NP SLE were excluded. Patients who received ≥1 dose of anifrolumab 300 mg or placebo were analyzed for depression and suicidality .[3,4] The Personal Health Questionnaire Depression Scale-8 (PHQ-8) and Columbia Suicide Severity Rating Scale (C-SSRS) were used to assess clinical depression and suicidal ideation and behavior, respectively. Incidence of adverse events (AEs) within the standardized Medical Dictionary for Regulatory Activities query of depression (excluding suicide and self-injury) and antidepressant use at baseline and during the study were also assessed.

Results In the TULIP pooled analysis, 360 patients received anifrolumab and 365 received placebo. Mean PHQ-8 scores were in the mild range (≥5 to <10); 9.7 in both groups at baseline (table 1). Excluding patients taking antidepressants, mean PHQ-8 scores were 9.5 in the anifrolumab group and 9.7 in the placebo group at baseline. No clinically meaningful worsening in mean PHQ-8 scores was observed from baseline to Week 52 in the anifrolumab (–2.0) or placebo (–1.3) groups; excluding patients taking antidepressants, mean changes in PHQ-8 were –2.0 and –1.2, respectively. Depression AEs during the study were reported in 11 anifrolumab-treated patients (3.1%) and 9 patients who received placebo (2.5%). At baseline, antidepressant use was comparable between groups (anifrolumab group, 7 patients [1.9%];



Abstract 607 Figure 1 C-SSRS summary, excluding patients taking antidepressants. [a]Percentages are based upon all patients included in the analysis within the respective pool and treatment group.

Abstract 607 Table 1 PHQ-8 summary

	All patients								Excluding patients taking antidepressants							
	Anifrolumab 300 mg N=360				Placebo N=365				Anifrolumab 300 mg N=360				Placebo N=365			
	n	Mean[a]	SD	Change[b]	n	Mean[a]	SD	Change[b]	n	Mean[a]	SD	Change[b]	n	Mean[a]	SD	Change[b]
Baseline	341	9.7	6.26	–	348	9.7	6.11	–	335	9.5	6.21	–	338	9.7	6.09	–
Week 24	295	7.6	5.89	–2.1	303	8.0	6.00	–1.5	289	7.5	5.84	–2.1	293	8.1	6.00	–1.5
Week 52	266	7.8	5.99	–2.0	261	7.9	6.03	–1.3	262	7.7	6.00	–2.0	252	7.9	5.96	–1.2

SD, standard deviation.
[a]PHQ-8 classifications: 0–4 = none, 5–9 = mild, 10–14 = moderate, 15–19 = moderately severe, and 20–24 = severe.
[b]Mean change from baseline.

placebo group, 9 patients [2.5%]). During the study, 8 anifrolumab-treated patients (2.2%) and 12 patients who received placebo (3.3%) used antidepressants; 1 (0.3%) and 4 (1.1%) patients, respectively, initiated antidepressant therapy during the study (1 in the placebo group stopped therapy). Suicidal ideation or behavior, as assessed by C-SSRS, during the study was reported in 5 anifrolumab- treated patients (1.4%) and 11 patients who received placebo (3.0%). Excluding patients taking antidepressants, suicidal ideation or behavior during the study was reported in 4 anifrolumab-treated patients (1.1%) and 9 patients who received placebo (2.5%) (figure 1).

Conclusions Patients with SLE treated with anifrolumab did not experience increased depression, suicidality, or need for antidepressants when compared with standard therapy, irrespective of baseline antidepressant use.

REFERENCES

1. Zhang L, *et al*. *BMC Psychiatry*. 2017;**17**:70.
2. Benlysta (belimumab) [prescribing information]. Philadelphia, PA: GlaxoSmithKline; 2021.
3. Furie RA, *et al*. *Lancet Rheumatol*. 2019;**1**:e208–19.
4. Morand EF, *et al*. *N Engl J Med*. 2020;**382**:211–21.

Acknowledgements Writing assistance by Andrea Y. Angstadt, PhD (Fishawack Health). This study was sponsored by AstraZeneca.

Submission deadline August 1, 2022 at 11:59 PM EST

Disclosures SM has received speaker fees from AstraZeneca; received consulting fees from AstraZeneca, Exagen Diagnostics, Inc, Cugene, GSK, Lilly, Lupus Foundation of America, and UCB Advisory Board; received grant support from HGS/GSK, AstraZeneca, and AbbVie. **CL, IH, MS**, and **GA** are employees of AstraZeneca. LZ, SW and RT are employees and shareholders of AstraZeneca.

608 SARS-COV-2 VACCINE SAFETY AND SIDE EFFECTS IN PEOPLE WITH SLE

Laura Yan, Arielle Mendel, Evelyne Vinet, Christian A Pineau, Fares Kalache, Louis-Pierre Grenier, Jennifer Lee, Popi Panaritis, Sasha Bernatsky.

10.1136/lupus-2022-lupus21century.29

Background People with SLE (and their doctors) are concerned about the risk of COVID-19 infection, yet some patients still harbor concerns regarding vaccination. The first mRNA SARS-CoV-2 vaccines were not studied in this population.[1, 2] To address this knowledge gap, we evaluated the safety and side effects of mRNA SARS-CoV-2 vaccines in people with SLE.

Methods At a Canadian tertiary care centre, we studied SLE cohort patients who were followed with standardized annual assessments. From January 2021 to May 2022, 345 SLE patients consecutively seen for their annual research visit reported information on SARS-CoV-2 vaccinations. We performed descriptive data analysis on the type of vaccination received, side effects, ER visits, and hospitalizations.

Result The patients were mostly female (n=306, 88.7%) and Caucasian (n=209, 60.6%) and the average SLE duration was 19.7 years (SD 11.9). Most patients (n=298, 86.4%) had received at least one SARS- CoV-2 vaccination and 248 (71.9%) has received at least 2 doses. Specifically, 50 (14.5%) had received one dose, 150 (43.5%) had received 2 doses and 98 (28.4%) had received at least 3. Most (n=181, 60.7%) of initial doses were Pfizer, followed by Moderna (n=54, 18.1%), AstraZeneca (n=12, 4.0%) and Johnson & Johnson (n=1, 0.3%). (The remaining (n=50, 16.8%) were unknown type.) About two-thirds (n=159, 63.3%) of the second doses were Pfizer, and 49 (19.5%) were Moderna.

Among those receiving at least 1 vaccination dose, 34 of 128 patients who responded to the question reported symptoms post-vaccine (26.6%). The most common symptoms were fever and injection- related arm pain; both were reported at equal frequency (n=9, 7.0%). Other symptoms were fatigue and headache (n=6, 4.6% for both). There were 3 cases of myalgia and 2 cases of arthralgia. One patient reported hypertension after the first dose of vaccine which required a short 24h ER visit. The remaining did not specify their symptoms. No patients reported disease flare in the post vaccination period.

Amongst those who provided information about SARS-CoV-2 infection (n=243), 19.3% reported testing positive for SARS-CoV-2. Only one patient required hospitalization for SARS-CoV-2 infection and was vaccine naïve at the time.

Conclusion SARS-CoV-2 mRNA vaccine side effects in this SLE population were reported in about a quarter of subjects but symptoms were mild, similar to reports in the general population. We did not detect any side effects requiring hospitalization. Since, in our cohort, the one subject requiring hospitalization for SARS-CoV-2 infection was vaccine-naïve, a benefit for SARS-CoV-2 vaccination in SLE seems evident.

REFERENCES

1. Polack FP *et al*; C4591001 Clinical Trial Group. Safety and Efficacy of the BNT162b2 mRNA Covid- 19 Vaccine. *N Engl J Med*. 2020;**383**(27):2603–2615. doi: 10.1056/NEJMoa2034577.
2. Baden LR *et al*. COVE Study Group. Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine. *N Engl J Med*. 2021;**384**(5):403–416. doi: 10.1056/NEJMoa2035389.