

THE LANCET

Rheumatology

Supplementary appendix

This appendix formed part of the original submission and has been peer reviewed. We post it as supplied by the authors.

Supplement to: Smetanova J, Strizova Z, Sediva A, Milota T, Horvath R. Humoral and cellular immune responses to mRNA COVID-19 vaccines in patients with axial spondyloarthritis treated with adalimumab or secukinumab. *Lancet Rheumatol* 2021; published online Dec 21. [https://doi.org/10.1016/S2665-9913\(21\)00393-3](https://doi.org/10.1016/S2665-9913(21)00393-3).

Table 1.

COHORT	ALL (n=17)	ADA (n=10)	SEC (n=7)	p value
Demography				
Gender (males)	15 (88.2%)	9 (90%)	6 (85.7%)	0.99 ¹⁾
Age (mean, +/-SD, yr.)	39.76 (+/-9.4)	40.1 (+/-9.2)	39.3 (+/-10.4)	0.76 ²⁾
Disease characteristics				
AS (n, %)	11 (64.7%)	8 (80%)	3 (42.9%)	0.16 ¹⁾
Nr-AxSpA (n, %)	6 (35.3%)	2 (20%)	4 (57.1%)	0.16 ¹⁾
HLA B27 (n, %)	14 (82.4%)	8 (80%)	6 (85.7%)	0.99 ¹⁾
Disease duration (mean, +/-SD, mo.)	97.3 (+/-80.8)	124.4 (+/-93.5)	54.9 (+/-21.8)	0.13 ²⁾
Extraskeletal manif. (n, %)	6 (35.3%)	4 (40%)	2 (28.6%)	0.64 ¹⁾
<i>Uveitis</i> (n, %)	2 (11.8%)	1 (10%)	1 (14.3%)	0.99 ¹⁾
<i>Psoriasis</i> (n, %)	4 (23.5%)	3 (30%)	1 (14.3%)	0.60 ¹⁾
Disease activity				
SJC-66 (mean +/- SD)	0.35 (+/-1.44)	0	0.86 (+/-2.27)	0.41 ²⁾
TJC-68 (mean +/- SD)	0.41 (+/-1.7)	0	1.0 (+/-2.65)	0.41 ²⁾
CRP (mean +/- SD, mg/L)	3.68 (+/-3.39)	2.12 (+/-0.67)	6.13 (+/-4.51)	0.01²⁾
ASDAS-CRP (mean +/- SD)	1.27 (+/-0.74)	0.91 (+/-0.36)	1.77 (+/-0.86)	0.02²⁾
BASDAI (mean +/- SD)	0.9 (+/-1.03)	0.54 (+/-0.6)	1.46 (+/-1.34)	0.21 ²⁾
BASFI (mean +/- SD)	0.69 (+/-0.71)	0.6 (+/-0.67)	0.81 (+/-0.8)	0.68 ²⁾
HAQ (mean +/- SD)	0.2 (+/-0.29)	0.25 (+/-0.34)	0.13 (+/-0.23)	0.42 ²⁾
Treatment				
duNSAID (n, %)	0	0	0	0.99 ¹⁾
bDMARD dosage (mg)	----	40 (+/-0.0)	150 (+/-0.0)	----
GCs (n, %)	----	16.8 (+/- 3.6)	28 (+/-0.0)	----

Table 1.

Baseline characteristics (Day 0) of the study cohort: 17 enrolled patients with ankylosing spondylitis (AS) and non-radiographic axial spondyloarthritis (Nr-AxSpA) treated with adalimumab (ADA) or secukinumab (SEC). Statistically significant differences (¹⁾Fisher's exact test, or ²⁾Unpaired t test with Welch's correlation $p \leq 0.05$) are bold highlighted (SD= standard deviation, mo.= months, yr.= years, SJC= swollen joint count, TJC= tender joint count, CRP= C-reactive protein, ASDAS= Ankylosing Spondylitis Disease Activity Score, BASDAI= Bath Ankylosing Spondylitis. Disease Activity Index, BASFI= Bath Ankylosing Spondylitis Functional Index, HAQ= Health assessment questionnaire, duNSAIDs= daily use of Non-steroidal anti-inflammatory drugs, bDMARDS= Biologic Disease-Modifying Antirheumatic Drugs, GCs= Glucocorticoids).

Table 2.

	IgA (U/ml) POSITIVE ABOVE 18 U/ml	IgG (U/ml) POSITIVE ABOVE 18 U/ml
HEALTHY CONTROLS	114.98	>1000.00
	462.722	>1000.00
	329.231	>1000.00
	450.804	>1000.00
	115.708	>1000.00
	430.5	>1000.00
ADALIMUMAB COHORT	30.81	>1000.00
	284.88	>1000.00
	29.74	>1000.00
	30.18	>1000.00
	164.36	>1000.00
	98.33	>1000.00
	45.37	>1000.00
	91.76	>1000.00
	165.05	>1000.00
	80.56	>1000.00
SECUKINUMAB COHORT	26,05	>1000.00
	200,12	>1000.00
	21,72	64,62
	111,87	>1000.00
	59,89	>1000.00
	51,39	>1000.00
	151,56	>1000.00

Table 2.

Humoral immune responses. IgA and IgG antibody titres in study participants vaccinated with two standard doses of anti-SARS-CoV-2 mRNA vaccina BNT162b2.

Table 3.

Healthy controls	Adalimumab cohort	Secukinumab cohort
CD4 ⁺ IFN γ ⁺ 0%	CD4 ⁺ IFN γ ⁺ 30%	CD4 ⁺ IFN γ ⁺ 0%
CD4 ⁺ TNF α ⁺ 0%	CD4 ⁺ TNF α ⁺ 40%	CD4 ⁺ TNF α ⁺ 0%
CD4 ⁺ IL17A ⁺ 17%	CD4 ⁺ IL17A ⁺ 30%	CD4 ⁺ IL17A ⁺ 0%
CD8 ⁺ IFN γ ⁺ 17%	CD8 ⁺ IFN γ ⁺ 20%	CD8 ⁺ IFN γ ⁺ 14%
CD8 ⁺ TNF α ⁺ 0%	CD8 ⁺ TNF α ⁺ 20%	CD8 ⁺ TNF α ⁺ 0%
CD8 ⁺ CD107a ⁺ 0%	CD8 ⁺ CD107a ⁺ 50%	CD8 ⁺ CD107a ⁺ 57%

Table 3.

Cellular non-responders. Full vaccination with the BNT162b2 vaccine revealed individual differences in the cellular immune responses with a percentage of non-responders observed in each study cohort.