

## SUPPLEMENT

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Supplementary Table 1. Country of origin of subjects included in the study

Country	N	%
Afghanistan	3	0.04
Albania	2	0.03
Algeria	1	0.01
Antigua & Deps	1	0.01
Argentina	9	0.13
Australia	13	0.19
Austria	3	0.04
Azerbaijan	1	0.01
Bahrain	44	0.63

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Bangladesh	20	0.29
Barbados	1	0.01
Belgium	1	0.01
Bolivia	1	0.01
Brazil	122	1.75
Bulgaria	65	0.93
Canada	35	0.5
Cape Verde	1	0.01
Chile	4	0.06
China	1	0.01
Colombia	10	0.14
Comoros	1	0.01

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Costa Rica	2	0.03
Cyprus	9	0.13
Czech Republic	3	0.04
Denmark	1	0.01
Dominican Republic	1	0.01
Ecuador	7	0.1
Egypt	53	0.76
El Salvador	5	0.07
Estonia	1	0.01
Finland	3	0.04
France	33	0.47
Germany	51	0.73

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Greece	2	0.03
Grenada	1	0.01
Guatemala	6	0.09
Honduras	1	0.01
Hungary	1	0.01
India	915	13.09
Indonesia	106	1.52
Iran	2	0.03
Iraq	1	0.01
Ireland {Republic}	10	0.14
Israel	37	0.53
Italy	394	5.64

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Japan	71	1.02
Jordan	1	0.01
Kazakhstan	9	0.13
Kenya	1	0.01
Korea South	1	0.01
Lebanon	113	1.62
Libya	1	0.01
Liechtenstein	1	0,01
Malaysia	5	0.07
Mexico	1.018	14.57
Micronesia	1	0.01
Montenegro	1	0.01

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Morocco	3	0.04
Netherlands	4	0.06
New Zealand	3	0.04
Nigeria	1	0.01
Norway	1	0.01
Oman	1	0.01
Pakistan	122	1.75
Panama	1	0.01
Philippines	132	1.89
Poland	159	2.28
Portugal	9	0.13
Qatar	3	0.04

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Romania	10	0.14
Russian Federation	62	0.89
Saudi Arabia	4	0.06
Singapore	4	0.06
Spain	82	1.17
Swaziland	1	0.01
Sweden	178	2.55
Switzerland	181	2.59
Taiwan	1	0.01
Thailand	1	0.01
Trinidad & Tobago	1	0.01
Turkey	1.143	16.36

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Ukraine	3	0.04
United Arab Emirates	27	0.39
United Kingdom	837	11.98
United States	796	11.39
Venezuela	11	0.16
Total	6.988	100

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Supplementary Table 2. Univariate negative binomial regression analysis for pain during the last week assessed using a visual analogue scale from zero to 10, clustered by country of origin.

Sample	Disease status	Groups	Predicted pain VAS mean	95%CI	Groups	95%CI	P> z	Coef	95%CI	P> z
All (n=6,988)		IIM	3.1	2.6 to 3.5	Ref				Ref	
		AIRDs	3.6	3.3 to 3.9	0.5	0.1 to 1.0	0.025	0.16	0.01 to 0.30	0.032
		HC	1.4	1.3 to 1.6	-1.7	-2.1 to -1.2	<0.001	-0.78	-0.95 to -0.62	<0.001
Based on physician assessment (reported by patients)	Active+HC (n=4,519)	IIM	3.9	3.5 to 4.2	Ref				Ref	
		AIRDs	4.4	4.0 to 4.7	0.5	0.1 to 0.9	0.021	0.11	0.02 to 0.21	0.023
		HC	1.4	1.3 to 1.6	-2.5	-2.8 to -2.1	<0.001	-1.02	-1.15 to -0.89	<0.001
	Inactive+HC (n=6,453)	IIM	2.9	2.5 to 3.3	Ref				Ref	
		AIRDs	3.4	3.1 to 2.8	0.5	0.1 to 1.0	0.015	0.17	0.30 to 0.32	0.020
		HC	1.4	1.3 to 1.6	-1.5	-1.9 to -1.1	<0.001	-0.72	-0.88 to -0.56	<0.001
Based on patient assessment	Active+HC (n=6,361)	IIM	3.2	2.7 to 3.7	Ref				Ref	
		AIRDs	4.0	3.7 to 4.3	0.8	0.3 to 1.2	0.002	0.21	0.07 to 0.36	0.004
		HC	1.4	1.3 to 1.6	-1.8	-2.3 to -1.3	<0.001	-0.83	-1.00 to -0.66	<0.001
	Inactive+HC (n=4,879)	IIM	2.6	2.1 to 3.1	Ref				Ref	
AIRDs		2.9	2.5 to 3.2	0.3	-0.3 to 0.9	0.375	0.10	-0.13 to 0.32	0.388	

	HC	1.4	1.3 to 1.6	-1.2	-1.7 to -0.6	<0.001	-0.61	-0.83 to -0.3	<0.001	
	IIM	3.5	3.2 to 3.7		Ref			Ref		
Based on glucocorticoid dose	Active+HC (n=4,951)	AIRDs	3.8	3.2 to 4.2	0.3	0.0 to 0.7	0.076	0.10	-0.01 to 0.20	0.065
	HC	1.4	1.3 to 1.6	-2.1	-2.3 to -1.8	<0.001	-0.90	-1.02 to -0.78	<0.001	
	IIM	2.8	2.3 to 3.3		Ref			Ref		
	Inactive+HC (n=6,021)	AIRDs	3.5	3.2 to 3.8	0.7	0.2 to 1.3	0.004	0.23	0.05 to 0.42	0.013
	HC	1.4	1.3 to 1.6	-1.4	-1.9 to -0.9	<0.001	-0.68	-0.88 to -0.48	<0.001	
	IIM	5.0	4.1 to 5.9		Ref			Ref		
General health status	Poor (n=242)	AIRDs	6.7	6.3 to 7.1	1.7	0.9 to 2.5	<0.001	0.29	0.13 to 0.45	0.001
	HC	4.2	3.1 to 5.4	-0.8	-2.2 to 0.6	0.268	-0.17	-0.49 to 0.14	0.283	
	Fair (n=1,177)	AIRDs	4.7	4.4 to 5.0	0.6	0.2 to 0.9	0.001	0.13	0.05 to 0.20	0.001
	HC	2.6	2.2 to 3.1	-1.5	-2.0 to -1.0	<0.001	-0.46	-0.64 to -0.27	<0.001	
	IIM	2.5	2.2 to 2.8		Ref			Ref		
	Good (n=2,510)	AIRDs	3.3	2.9 to 3.7	0.8	0.4 to 1.3	<0.001	0.29	0.14 to 0.44	<0.001
	HC	1.9	1.7 to 2.0	-0.6	-0.9 to -0.3	<0.001	-0.28	-0.40 to -0.16	<0.001	
	Very good (n=2,142)	AIRDs	1.9	1.6 to 2.2	0.2	-0.3 to 0.7	0.442	0.11	-0.17 to 0.39	0.447
	IIM	1.7	1.4 to 2.1		Ref			Ref		

	HC	1.1	1.0 to 2.2	-0.6	-1.0 to -0.2	0.001	-0.43	-0.67 to -0.020	<0.001	
	IIM	0.9	0.0 to 1.7		Ref			Ref		
Excellent (n=917)	AIRDs	1.2	0.6 to 1.7	0.3	-0.7 to 1.4	0.567	0.31	-0.84 to 1.46	0.599	
	HC	0.8	0.6 to 0.9	-0.1	-0.9 to 0.7	0.852	-0.10	-1.04 to -0.85	0.844	
	IIM	3.2	2.2 to 4.2		Ref			Ref		
Not at all (n=160)	AIRDs	4.0	1.6 to 6.4	0.8	-1.7 to 3.2	0.544	0.21	-0.43 to 0.85	0.513	
	HC	2.0	0.9 to 3.2	-1.2	-2.8 to 0.4	0.151	-0.47	-1.15 to 0.22	0.185	
	IIM	4.1	3.4 to 4.8		Ref			Ref		
A little (n=482)	AIRDs	5.7	4.8 to 6.6	1.6	0.7 to 2.5	<0.001	0.33	0.15 to 0.51	<0.001	
	HC	3.4	2.6 to 4.3	-0.7	-1.6 to 0.3	0.172	-0.18	-0.43 to 0.08	0.183	
	IIM	3.7	3.1 to 4.3		Ref			Ref		
Ability to carry out routine activities	Moderately (n=964)	AIRDs	4.7	4.3 to 5.1	1.0	0.3 to 1.6	0.006	0.23	0.05 to 0.40	0.010
	HC	2.8	2.5 to 3.1	-0.9	-1.5 to -0.3	0.002	-0.29	-0.46 to -0.12	0.001	
	IIM	2.8	2.5 to 3.0		Ref			Ref		
Mostly (n=1,424)	AIRDs	3.8	2.6 to 4.0	1.0	0.7 to 1.3	<0.001	0.31	0.20 to 0.41	<0.001	
	HC	2.1	2.0 to 2.3	-0.7	-1.0 to -0.3	<0.001	-0.27	-0.39 to -0.15	<0.001	
	IIM	1.7	1.3 to 2.1		Ref			Ref		
Completely (n=3,658)	AIRDs	2.1	1.7 to 2.4	0.3	-0.2 to 0.8	0.191	0.18	-0.10 to 0.45	0.206	

	HC	1.1	0.9 to 1.2	-0.6	-1.1 to -0.2	0.004	-0.46	-0.73 to -0.19	0.001
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AIRDs: systemic autoimmune rheumatic diseases; CI: coefficient interval; Coef: coefficient; HC: healthy control; IIM: idiopathic inflammatory myopathies; Ref: reference; VAS: visual analogue score

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