

Appendix 1

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Sjögren Big Data Consortium

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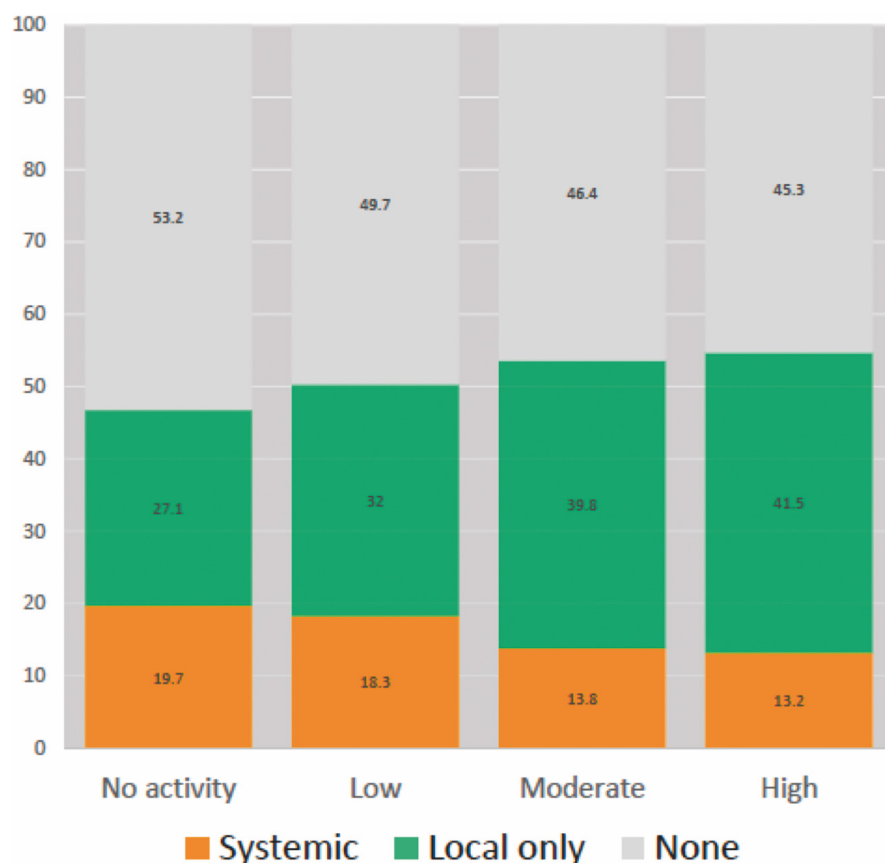
Supplementary Table S1. Adverse events and disease flares in patients with autoimmune rheumatic disease following SARS-CoV-2 vaccination.

| | Machado <i>et al.</i> (1) | Tzioufas <i>et al.</i> (2) | Connolly <i>et al.</i> (3) | Furer <i>et al.</i> (4) | Esquivel- Valerio <i>et al.</i> (5) | Ferri <i>et al.</i> (6) | Sattui <i>et al.</i> (7) | Riberio <i>et al.</i> (8) |
|--|------------------------------|-------------------------------|-------------------------------|--------------------------------|---|----------------------------|-----------------------------|--------------------------------|
| Number of vaccinated patients with rheumatic disease | 4604 | 605 | 1377 | 686 | 225 | 478 | 2860 | 910 |
| Types of diseases | | | | | | | | |
| Rheumatoid arthritis, n (%) | 1686 (36.6) | 168 (27.8) | 647(47) | 263 (38.3) | 132 (58.6) | 101 (21.1) | 1209 (42.3) | 256 (28.1) |
| Spondyloarthropathies n (%) | 1192 (25.9) | 126 (20.8) | | 233 (34) | 29 (9.7) | ND | 462 (16.2) | 195 (21.4) |
| Systemic lupus erythematosus n (%) | 367 (8) | 118 (19.5) | 273 (20) | 101 (14.7) | 25 (11.1) | 38 (7.9) | 391 (13.7) | 232 (25.5) |
| Sjögren's syndrome n (%) | 223 (4.8) | 58 (9.6) | 65 (5) | ND | 12 (5.3) | ND | 438 (15.3) | 42 (4.6) |
| Vasculitis n (%) | 593 (12.9) | 67 (11.1) | 41 (3) | 70 (10.2) | ND | 74 (15.5) | 167 (5.8) | 66 (7.3) |
| Other diseases n (%) | 722 (15.7) | 68 (11.2) | 351 (23) | 19 (2.8) | 33 (14.6) | 265 (55.4) | 929 (32.5) | 119 (13.1) |
| Patients with adverse events n (%) | 1894 (41.1) | ND | (D1 87% D2 86%) | ND | 173 (76.8) | 221 (46.2) | 1350 (47.2) | D1 459 (50.5) D2 348 (39) |
| Total Adverse Event Counts | 3334 | 699 | ND | | 265 | 287 | ND | |
| Number of local adverse events n (%) | 1106 (33.1) | 263 | ND | D1: 418, D2: 343 | 158 | 182 | ND | D1 213 (23.4) D2 154 (17.2) |
| Number of systemic adverse events n (%) | 2228 (66.9) | 436 | ND | D1: 210 D2: 528 | 107 | 105 | ND | D1 392 (43.3) D2 298 (33.4) |
| Flares n (%) | 204 (3.4) | 96 (15.9) | 151 (11) | D1: 17 (2.53) D2: 12 (1.79) | ND | ND | 382 (13.4) | ND |
| SARS-CoV-2 infection after vaccination | 46 (1) | ND | ND | ND | ND | ND | ND | ND |

(D1: after the first dose of the vaccine, D2: after the second dose of the vaccine).

Supplementary Table S2. Demographics and disease-related characteristics of COVID-19-vaccinated patients with pSS.

| | | | |
|---|-----------------|--|-----------------|
| 1. Epidemiological data | | 3.6. Pulmonary domain | |
| 1.1. Gender | | No | 1157 (94.1) |
| F | 1170 (94.6) | Low | 52 (4.2) |
| M | 67 (5.4) | Moderate | 20 (1.6) |
| 1.2. Age at diagnosis (n=1235) | 50.5 ± 13.2 | 3.7. Renal domain | |
| 2. Sicca features at diagnosis | | No | 1218 (99.1) |
| 2.1. Item I (ocular symptoms) | 1141 (92.2) | Low | 4 (0.3) |
| 2.2. Item II (oral symptoms) | 1134 (91.7) | Moderate | 4 (0.3) |
| Diagnostic tests at diagnosis | | High | 3 (0.2) |
| 2.3. Item III-1 (Schirmer's test ≤5 mm in 5 minutes in at least one eye) | 879/1078 (81.5) | 3.8. Muscular domain | |
| 2.4. Item III-2 (ocular staining, ≥4 van Bijsterveld score and/or ≥5 OSS in at least one eye) | 328/471 (69.6) | No | 1217 (99) |
| 2.5. Item IV (salivary biopsy, focus score ≥1) | 675/771 (87.5) | Low | 10 (0.8) |
| 2.6. Item V-1 (unstimulated whole salivary flow ≤1.5 mL in 15 min) | 582/702 (82.9) | Moderate | 2 (0.2) |
| 2.7. Item V-2 (altered parotid sialography) | 186/212 (87.7) | 3.9. PNS domain | |
| 2.8. Item V-3 (altered salivary scintigraphy) | 239/274 (87.2) | No | 1175 (95.6) |
| 2.9. Item VI-1 (anti-Ro/SSA) | 897/1236 (72.6) | Low | 42 (3.4) |
| 2.10. Item VI-2 (anti-La/SSA) | 496/1224 (40.5) | Moderate | 8 (0.7) |
| 3. Systemic activity at the visit (n=1229) | | High | 4 (0.3) |
| ESSDAI domains | | 3.10. CNS domain | |
| 3.1. Constitutional domain | | No | 1223 (99.5) |
| No | 1166 (94.9) | Moderate | 5 (0.4) |
| Low | 60 (4.9) | High | 1 (0.1) |
| Moderate | 3 (0.2) | 3.11. Haematological domain | |
| 3.2. Lymphadenopathy domain | | No | 1094 (89) |
| No | 1122 (91.3) | Low | 122 (9.9) |
| Low | 90 (7.3) | Moderate | 12 (1) |
| Moderate | 10 (0.8) | High | 1 (0.1) |
| High | 7 (0.6) | 3.12. Biological domain | |
| 3.3. Glandular domain | | No | 907/1202 (75.5) |
| No | 1125 (91.5) | Low | 207/1202 (17.2) |
| Low | 96 (7.8) | Moderate | 88/1202 (7.3) |
| Moderate | 8 (0.7) | 4. Type and modification of pre-vaccination SS treatments | |
| 3.4. Articular domain | | Treatment modifications | |
| No | 893 (72.7) | No change | 1153 (93.8) |
| Low | 257 (20.9) | Delay | 3 (0.2) |
| Moderate | 67 (5.5) | Withdraw | 68 (5.5) |
| High | 12 (1) | Dose reduction | 14 (1.2) |
| 3.5. Cutaneous domain | | Treatment types | |
| No | 1178 (95.9) | Biologic treatment | 18 (1.5) |
| Low | 21 (1.7) | Glucocorticoids | 26 (2.1) |
| Moderate | 28 (2.3) | csDMARDs | 28 (2.2) |
| High | 2 (0.2) | No treatment | 1147 (93.2) |



Supplementary Fig. S1. Distribution of AEs (only local, systemic, and none) stratified according to the ESSDAI activity at the time of the first shot (no activity, low, moderate, and high).

Supplementary Table S3. Patient characteristics associated with sicca exacerbation following vaccination.

| Variables | Sicca symptoms worsened | | OR [95% CI] | Multivariate OR [95% CI] |
|------------------------------|-------------------------|----------------|-------------------------|--------------------------|
| | No (n = 1081) | Yes (n = 141) | | |
| Mean age at vaccination | 60.6 ± 12.7 | 59.4 ± 11.8 | 0.99 [0.98-1.01] | |
| Age (<60 years) | 484/1080 (44.8) | 68 (48.2) | 1.15 [0.81-1.63] | |
| Sex (women) | 1020 (94.4) | 136 (96.5) | 1.63 [0.71-4.72] | |
| Ethnicity (white) | 879/1038 (84.7) | 121/129 (93.8) | 2.74 [1.40-6.19] | 1.90 [0.85-4.71] |
| Country (Europe) | 823 (76.1) | 124 (87.9) | 2.29 [1.39-4.00] | 1.64 [0.92-3.14] |
| Anti-Ro/La (+) | 816 (75.5) | 91 (64.5) | 0.59 [0.41-0.86] | 0.58 [0.40-0.86] |
| Mean ESSDAI at vaccination | 3.2 ± 4.6 | 2.9 ± 4.00 | 0.98 [0.94-1.02] | |
| Disease activity state (low) | 781/1048 (74.5) | 105/140 (75) | 1.03 [0.69-1.56] | |
| Previous SARS CoV2 infection | 74/1011 (7.3) | 8/140 (5.7) | 0.77 [0.33-1.54] | |
| Vaccine type (RNA) | 698 (64.6) | 102 (72.3) | 1.44 [0.98-2.14] | |
| Vaccine regimen (incomplete) | 86 (8.0) | 10 (7.1) | 1.13 [0.60-2.37] | |

Supplementary Table S4. Characteristics of patients with systemic SS exacerbations in clinical ESSDAI domains after vaccination.

| Country | Sex (age) | ESSDAI score at time of vaccination | COVID-19 vaccine | Post-vaccination ESSDAI activity | Exacerbation or new systemic activity | Days after shot | First or second shot | ESSDAI severity | Histopathological study | Treatment | Outcome |
|-------------|-----------|-------------------------------------|------------------|---|---------------------------------------|-----------------|----------------------|---|-------------------------|-------------|----------|
| Brazil | F (39) | 2 | nCov-19 | Diffuse purpura + Bilateral parotid enlargement | New | 7 | 1 | High(cutaneous), Moderate (parotiditis) | ND | Cs | Resolved |
| Brazil | F (13) | 9 | nCov-19 | Polyarthritits | New | 7 | 1, 2 | Moderate | ND | Cs | Resolved |
| Brazil | F(30) | 18 | CV | Diffuse purpura | Relapse | 10 | 2 | High | ND | Cs | Resolved |
| Brazil | F(59) | 2 | BNT | Interstitial lung disease + arthralgia | New (ILD), Relapse (arthritis) | 14 | 1 | Low | ND | Cs | Resolved |
| France | F(57) | 2 | BNT | Arthritis | New | 3 | 1 | Moderate | ND | Cs | Resolved |
| Italy | F(58) | 6 | BNT | Diffuse purpura | Relapse | 5 | 1 | High | ND | Cs | Resolved |
| Italy | F(69) | 5 | BNT | Limited purpura | Relapse | 10 | 2 | Moderate | ND | Cs+MTX+ HCQ | Resolved |
| Slovenia | F(48) | 0 | BNT | Arthritis | Relapse | 5 | 2 | Moderate | ND | Cs+NSAIDs | Resolved |
| Brazil | F(31) | 2 | nCov-19 | Arthritis, left parotid enlargement | Relapse(arthritis), New (parotiditis) | 1 | 1 | Moderate (arthritis), Low (parotiditis) | ND | Cs | Resolved |
| Brazil | F(42) | 0 | CV | Limited purpura | New | 4 | 1 | Moderate | ND | Cs | Resolved |
| Netherlands | M(32) | 0 | BNT | Bilateral parotid enlargement | Relapse | 21 | 2 | Low | ND | Symptomatic | Resolved |
| Netherlands | F(44) | 5 | BNT | Trigeminal neuropathy | Relapse | 21 | 1 | Low | ND | Symptomatic | Resolved |
| Netherlands | F(42) | ND | BNT | Bilateral parotid enlargement | Relapse | 6 | 2 | Low | ND | Symptomatic | Resolved |
| Netherlands | F(19) | 4 | BNT | Bilateral parotid enlargement | Relapse | 36 | 2 | Low | ND | Symptomatic | Resolved |
| Netherlands | F(46) | 5 | BNT | Bilateral parotid enlargement | Relapse | 14 | 1 | Low | ND | Symptomatic | Resolved |

nCov-19: ChAdOx1 nCov-19; CV: CoronaVac; BNT: BNT162b2; F: female; M: male; ND: not determined; ILD: interstitial lung disease; Cs: corticosteroids; MTX: methotrexate; HCQ: hydroxychloroquine.

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