COVID-19, rheumatology and Behçet's Disease: A COVID-19 Global Rheumatology Alliance perspective

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Disclosures

- Personal Disclosures
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The COVID-19 Global Rheumatology Alliance Registry - December 1, 2020



Risk Factors for COVID-19 Hospital Admission

Population: All rheumatic disease patients N = 600

COVID-19 Global Rheum Registry

- Total n = 600
- Female = 473 (71%)
- Median age 56 years (45 67)
- Outcomes:
 - Hospitalised 46% (277/600)
 - Died (9%) 55/600

- Rheumatic Diagnoses
 - Rheumatoid arthritis 230 (38%)
 - Systemic Lupus 85 (14%)
 - Psoriatic arthritis 74 (12%)
 - axial SpA 48 (8%)
 - Vasculitis 44 (7%)
 - Sjogren's 28 (5%)
 - Inflam myopathy 20 (3%)
 - Gout 19 (3%)
 - Systemic Sclerosis 16 (3%)

Methodology

- The independent associations between demographic and disease- specific features with the odds of hospitalisation were estimated using multivariable adjusted logistic regression and reported as OR and 95% Cis
- Covariates included in the model were age group, sex, rheumatic disease, key comorbidities, smoking status, physician reported disease activity, DMARD type (no DMARD, csDMARD only, b/tsDMARD only, csDMARD and b/tsDMARD combination therapy) and prednisone equivalent glucocorticoid use (0 mg/ day, 1–9 mg/day, ≥10 mg/day).
- Multiple sensitivity analyses conducted (see paper)

Odds of Hospitalisation for COVID-19 by Diagnosis



Gianfrancesco et al. Ann Rheum Dis 2020;79:859-866

Odds of Hospitalisation for COVID-19 by co-morbidity



Gianfrancesco et al. Ann Rheum Dis 2020;79:859-866

Odds of Hospitalisation for COVID-19 by Medication



csDMARD = methotrexate, leflunomide, hydroxychloroquine; NSAIDS= Non-steroidal anti-inflammatories b/tsDMARD = biologics (including TNFi) & JAK inhibitors; TNFi = tumour necrosis factor inhibitors

Gianfrancesco et al. Ann Rheum Dis 2020;79:859-866

Odds of Hospitalisation for COVID-19 by Prednisone dosage



Gianfrancesco et al. Ann Rheum Dis 2020;79:859-866

Risk Factors for COVID-19 Hospital Death

Population: All rheumatic disease patients N = 3,729

COVID-19 Global Rheum Registry

- Total n = 3,729
- Female = 68%
- Mean age = 57 years
- Outcomes:
 - Hospitalised 49%
 - Died 10.5%

- Rheumatic Diagnoses
 - Rheumatoid arthritis 1,394 (37%)
 - Psoriatic arthritis 440 (12%)
 - SpA 431 (12%)
 - Systemic Lupus 391 (11%)
 - Vasculitis 326 (9%)
 - Non SLE CTD 533 (14%)

Main analysis: All patients (1) RA only, (2) All Inflammatory arthritis and (3) Vasculitis & CTD

Methodology

- Independent associations between demographic and disease features and COVID-19-related death were estimated using multivariable logistic regression and reported as OR and 95% CI.
- Covariates included in the model were age, sex, key comorbidities smoking status, rheumatic disease diagnostic group, disease activity as per the physician's global assessment, rheumatic disease treatment prior to COVID-19 diagnosis and prednisolone-equivalent glucocorticoid use.
- To account for marked inter-country differences, **countries analysed as clusters**, using Taylor series linearisation.
- Many sensitivity analyses conducted (see paper)









Comparative Studies

Non-COVID-19 Global Rheumatology Alliance Work

Basic information on rheumatic cases enrolled in this study.



Rheumatic disease = 21, controls = 2,305



Comparative Studies: RMD vs Controls

	Pts	Contls	Outcomes
D'Silva (ARD) Boston, MA	52	104	After adjusting for age, gender, smoking and co-morbidity no higher risk of hospitalization or death. Higher risk of mechanical ventilation
Sterling-Boyd (ARD) Boston, MA	688	143	After adjusting for age, gender, ethnicity, smoking and co- morbidity no higher risk of hospitalization, ICU admission or death
D'Silva (A&R) US-wide TriNetX	2,379	142,750	After adjusting for ethnicity, age, gender and co-morbidity no higher risk of hospitalization, ICU admission or death

C19- GRA Behçet's patients

- Total = 71
 - USA = 10
 - France = 8
 - Oman = 7
 - Italy = 7
 - Spain = 6
 - Turkey = 5
 - Brazil = 5
 - ...
 - England = 3

Med Category	
None	23
csDMARDs only	25
b/tsDMARDs only	13
csDMARDs +	
b/tsDMARDs	10
Specific Meds	
TNFi	20
IL6	2
IL17	1
Apremilast	4
Colchicine	25
Azathioprine	20
Cyclophosphamide	1
Mycophenolate	3
Sulfasalazine	4
Methotrexate	9

A silver lining?

- Some drugs, in some studies reduce poor COVID-19 outcomes
 - Treatment course **glucocorticoids**: Recovery Platform
 - Anti-TNF: Rheum registry & gastro registry
 - JAK inhibitors: ACTT-1 NIH study baricitinib & rheum registry
 - Anti-IL-6: REMAP-CAP platform but also many neutral or negative

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