



Covid19 among patients with autoimmune inflammatory rheumatic diseases (AIIRD) in Israel: the pattern of the pandemic, clinical characteristics and the impact on the AIIRD

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Background: The epidemiology of COVID19 among patients with AIIRD may be influenced by the dysregulated immune system, the immunosuppressive therapy and behavioral patterns specific to this population..

Aims: To assess the pattern of COVID19 pandemic among patients with AIIRD compared to the general population in Israel and the impact of the viral infection on the rheumatic disease course.

Methods: At the beginning of the COVID-19 pandemic, we established a national registry of patients with AIIRD, diagnosed with COVID-19, based on voluntary reporting by the treating rheumatologist. All the members of the Israeli Society of Rheumatology were encouraged to participate and repeatedly reminded to report any new cases. Twelve centers contributed in this study. The registry includes demographic data, AIIRD diagnosis and duration, systemic involvement, co-morbidities, treatment (conventional synthetic disease modifying drugs (csDMARDs), biologic/targeted (b/ts) DMARDs, corticosteroids dose and treatment duration, COVID19 date of diagnosis, severity, complications, treatment and duration of hospitalization, laboratory results and outcome. The diagnosis of COVID 19 was made by a positive SARS CoV2 PCR. Severe illness was defined by SpO₂ <94% in room air, respiratory rate of >30 breaths/min, PaO₂/FiO₂ <300 mm Hg, or lung infiltrates >50% on chest imaging. The treating rheumatologists were asked to provide status of rheumatic disease activity 1-3 months after convalescence. The daily numbers of COVID19 patients, severe cases and deaths due to the pandemic in the general population, were extracted from the data dashboard of the Israeli Ministry of Health. We analyzed data from 02.2020 to 20.02.2021.

Results: During the study period we experienced 3 waves of COVID 19 pandemic. At the beginning of the pandemic, the governmental enforced severe travel restrictions and social distancing, followed by a preventive lockdown, in spite of the relatively low number of cases. Easing of the restrictions led to 2 severe waves, which triggered 2 new lockdowns. Up to February 2021, 761551 Israeli citizens had confirmed COVID19, 30% of whom had severe disease, 0.84% died (30% of the patients with severe disease).

We identified 233 AIIRD patients (mean(SD) age 52(18), 29% males) who had confirmed COVID19. The weekly incidence curve of patients with rheumatic diseases correlated with the curve of the general population.

CsDMARDs, b/tsDMARDs chronic corticosteroids, ≥ 10 mg prednisone were used in 62%, 41%, 39%, 12% of AIIRD patients, respectively. Hospitalization was required for 47% of the patients, 20% had severe COVID 19, 7.7% died.. All the patients who died had at least 2 comorbidities, 50% of them had active rheumatic disease. Follow-up visits were reported for 160 patients, the rheumatic disease remained stable in 80% of them.

Conclusions: The pattern of spread of COVID19 in AIIRD patients is similar to the general population despite repeated mass media alerts for enhanced social distancing for elderly and immune suppressed patients. The disease tends to be more severe with enhanced mortality, especially in those with active AIIRD disease and organ involvement (lungs, heart, renal), older age and co-morbidities. The rheumatic disease remained stable in most of the patients who recovered from COVID 19. A reporting bias cannot be excluded.

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