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Effect of socio-economic status and educational level on COVID-19 outcomes in patients with rheumatic diseases from Argentina: Data from the SAR-COVID Registry

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Background:

SARS-CoV-2 infection can present with a broad clinical spectrum, from asymptomatic to lethal. Different risk factors have been recognized. Socio-economic status and educational level may affect access to the healthcare system and therefore COVID-19 infection outcome.

Objectives:

The aim of this study was to assess the association between socio-demographic status and educational level and SARS-CoV-2 outcomes, such as hospitalization, ICU admission, need for mechanical ventilation and death, in Argentinean patients with rheumatic diseases from the SAR-COVID Registry.

Methods:

We performed a cross-sectional study of consecutive adult patients with rheumatic diseases and SARS-CoV-2 infection included in the multicentric Argentinean SAR-COVID Registry. The following variables were included: gender, ethnicity, age, health insurance, educational level (under or over 12 years of education), socio-economic level according to Graffar Scale in high, medium-high, medium, medium-low, low; underlying rheumatic disease, its duration and treatment at the time of infection.

SARS-CoV-2 infection outcomes were: hospitalization, admission to ICU, mechanical ventilation requirement and death.

Statistical analysis was performed using Chi^2, Fisher, T-test, ANOVA.

Results:

Five hundred and twenty-five patients were included, 422 (80.4%) were female, with a mean age of 51.3 years (SD 15.2). Most of them were caucasians (48%) or mestizos (43%) and 96.8% lived in an urban environment. Almost half of the patients (47%) were categorized as

middle-class, 24% middle-high or high class, 21% middle-low or low. 48.4% of the patients were employed. Regarding educational level, 54% had more than 12 years of education.

The most prevalent rheumatic disease was Rheumatoid Arthritis (40.4%), followed by Systemic Lupus Erythematosus (14.9%), Sjögren (5.5%) and Psoriatic Arthritis (5.5%). Treatments used at the time of SARS-CoV-2 infection were corticosteroids (19%), cs-DMARDs (49%), and b- and ts-DMARDs (16%).

Overall hospitalization frequency was 35%, median hospital stay was 10 days (IQR 10 days), 11.6% were admitted to the ICU, 10% required mechanical ventilation and the global mortality was 8%.

Notably, patients with less than 12 years of education required mechanical ventilation more frequently than the more educated ones (11.9% vs. 5.6%, p=0.026) and showed a higher mortality due to COVID-19 (9% vs. 2.8%, p=0.0004).

Patients categorized as upper social classes (middle-high and high) were admitted to the hospital on a more frequent basis (74.4% of cases), when compared with middle class (64.4%) and middle-low and low class (58%) (p=0.77). Median duration of hospitalization for the aforementioned groups was 12.5 (IQR 17.3), 10 (IQR 9) and 10.5 (IQR 9.3) days respectively (p=0.60).

Patients with health insurance were found to be hospitalized more frequently in comparison to those without insurance (42.4% vs. 33.7%, p=0.14), but showed similar admission rates to the ICU (11.8% vs. 12.8%; p=0.78), need for mechanical ventilation (10.7% vs. 8.7%; p=0.70) and mortality (7.1% vs. 6.5%; p=0.99).

Caucasian patients had fewer hospital admissions when compared against other ethnicities (mestizos mostly) (26.1% vs. 43.4%; p<0.0001), but showed no statistically significant difference in need for mechanical ventilation 10.3% vs. 9.9% (p=0.99) or mortality 8.7% vs. 5.1% (p=0.15).

Conclusion:

Patients with lower educational level needed twice the frequency of mechanical ventilation, and showed thrice the mortality than those with more than 12 years of education.

Albeit patients in upper social stratus and those with health insurance were admitted to the hospital in a more frequent manner, no statistically significant differences were found regarding the need for ICU, mechanical ventilation or mortality.

Caucasians were hospitalized less frequently than mestizos, but had no significant differences in the other measured outcomes.

References:

None.

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