Impact of the COVID-19 Pandemic on the Appropriateness of Diagnostic Pathways of Autoimmune Rheumatic Diseases

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Thank you so much for having me today, my name is Teresa Carbone and on behalf of my co-authors I’m glad to be taking you through an overview of our recent publication titled' Impact of COVID-19 pandemic on appropriateness of diagnostic pathways of autoimmune diseases'.

The COVID-19 outbreak has rapidly affected hospitals worldwide resulting in a rapid and forced reorganization of human resources and activities. Additionally, this has created a greater challenge for the management of patients affected by other diseases. Some effects of the COVID-19 pandemic on health care systems have been investigated; few data are available on the impact on management of rheumatic diseases, but no study addressed the influence on appropriateness of diagnostic pathways of autoimmune diseases. This was a study that we actually did during the height of the pandemic last year, so in addition of the frontline work we are interested in really understanding how COVID19 impacted the rheumatological clinical practice and autoimmunity testing demands in our region.

The Regional San Carlo Hospital is the largest hospital in our region and the local leading center for autoimmune rheumatological diseases. We analyzed clinical and laboratory activities’ trends comparing two distinct periods: from January to December of 2020 to the same period of 2019.

We first analyzed the impact of the pandemic on autoimmunity testing orders coming from both outpatients and inpatients: a statistically significant reduction of all laboratory parameters investigated was found during the pandemic period. There were nearly 1.5 times lower tests ordered in 2020 compared to 2019.

As you can see on the figure, when laboratory parameters coming from only outpatients were selected, the same trend was observed, with a strong decline during the first wave and a lower decrease during the second wave of the COVID-19 pandemic, remaining anyway lower than the pre-pandemic state for the entire year.
When positive results of autoimmunity testing were extrapolated for the study periods, an interesting finding emerged: while the absolute number decreased, the percentage of positive results on total volume increased, especially for ANA, anti-dsDNA, rheumatoid factor and anti-neutrophil cytoplasmic antibodies testing.

Compared with 2019, a significant reduction in first rheumatological visits and new diagnoses was observed in 2020. As shown in the Figure, the highest percentage change was recorded during the lockdown period (March-May 2020), in which total visits decreased by 83%.

As you can see, a significant decrease was specifically observed for new diagnoses of non-inflammatory conditions or diseases without systemic involvement, such as osteoarthritis, osteoporosis, fibromyalgia, regional syndromes and peripheral neuropathies. In contrast, no significant changes were observed in numbers of new diagnoses of chronic inflammatory rheumatic diseases characterized by more severe features at onset.

To the authors’ knowledge, this is the first study describing the effect of the COVID-19 pandemic on rheumatological clinical practice and on autoimmunity testing demand. Our results demonstrated that, also in the presence of a serious ongoing emergency, patients with high clinical suspicion of severe rheumatic disease have benefited from both autoimmunity tests and visits by rheumatologists in order to receive a proper diagnosis.

We can say that greater appropriateness and specificity of the requests of autoimmunity testing and rheumatological visits emerged during the pandemic.

Thank you for your time and attention.