



In systemic sclerosis patients the anxiety disorder and Raynaud's phenomenon are increased during lock down period for COVID-19 pandemic

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Dear Editor,

The outbreak of coronavirus disease (COVID-19) has radically changed the quality of life of patients with connective tissue diseases.

Since systemic sclerosis (SSc) patients are susceptible to distress and psychological complications with high level of pain and disability, COVID-19 pandemic can change the course of the disease.

Aim of this study was to identify factors impacting the health-related-quality of life during total Italian lockdown for COVID-19 pandemic in the Lazio region.

Sixty-nine consecutive SSc patients [F = 63, median age 55 (53–63) years; 28 patients with diffuse cutaneous SSc] were enrolled in this study. The availability of questionnaires previously self-compiled between September 2019 and January 2020 is the main inclusion criteria. During COVID-19 total lockdown, the questionnaires were re-administered by telephone interview in all SSc patients. All SSc patients continued previous therapy.

Health Assessment Questionnaire (HAQ) with the addition of five validated Visual Analogue Scale (VAS) instruments (pain, gastrointestinal, lung, Raynaud's phenomenon and digital ulcers) [1], University of California, Los Angeles Scleroderma Clinical Trial Consortium Scleroderma Gastrointestinal Tract Involvement 2.0 (UCLA) [2], Generalized Anxiety Disorder 7 (GAD-7) [3] and Patient Health Questionnaire 9 (PHQ-9) [4] were analyzed pre and post total lockdown.

All results are expressed as median and interquartile range. A software (SPSS version 25.0) was used for the

statistical analysis. Group comparisons were made by Mann–Whitney test. Spearman's rank coefficient was used to evaluate correlation between numerical variables. *p* values < 0.05 were considered significant.

During the total Italian lockdown period, SSc patients showed higher score of the GAD-7 anxiety scale [6 (5–9) vs 5 (4–7), *p* = 0.031] and VAS of Raynaud's phenomenon [30 (20–50) vs 20 (10–30), *p* = 0.014]. Gastroesophageal reflux symptoms were more prevalent in non-employed SSc patients than SSc patients employed. A positive linear correlation between delta of GAD-7 anxiety scale and delta of VAS of Raynaud's phenomenon (*r* = 0.317, *p* = 0.008) and between delta of GAD-7 anxiety scale and delta of HAQ (*r* = 0.323, *p* = 0.007) was found (Fig. 1a, b).

During the total lockdown, SSc patients showed high value of anxiety scale and worsening of Raynaud's phenomenon. In SSc patients, Raynaud's phenomenon is a common clinical manifestation leading to distressing physical symptoms, functional disability and reduced health-related quality of life. Cold exposure and emotional stress are the triggers of Raynaud's phenomenon. In the Preliminary Advice for Patient Management, World Scleroderma Foundation (WSF) suggests that patients should limit their visits to the hospital/clinic until the pandemic fades and the government lifts strict rules [5]. Although the WSF recommends isolation, it can be an additional stress factor that worsens the disease especially in patients with severe form (e.g. male). Although Raynaud's phenomenon to be more controlled with being forced at home avoiding cold exposure, but it is also true that the psychological impact of the stressful period might have overruled this advantage. Telemedicine is a viable approach to be considered for routine follow-up of patients with connective tissue diseases. Telemedicine can reduce the patient's feeling of isolation and the level of stress [6].

The sedentary lifestyle and domestic routine, due to COVID-19 total lockdown, could probably have contribute to increase awareness of disability in daily activities.

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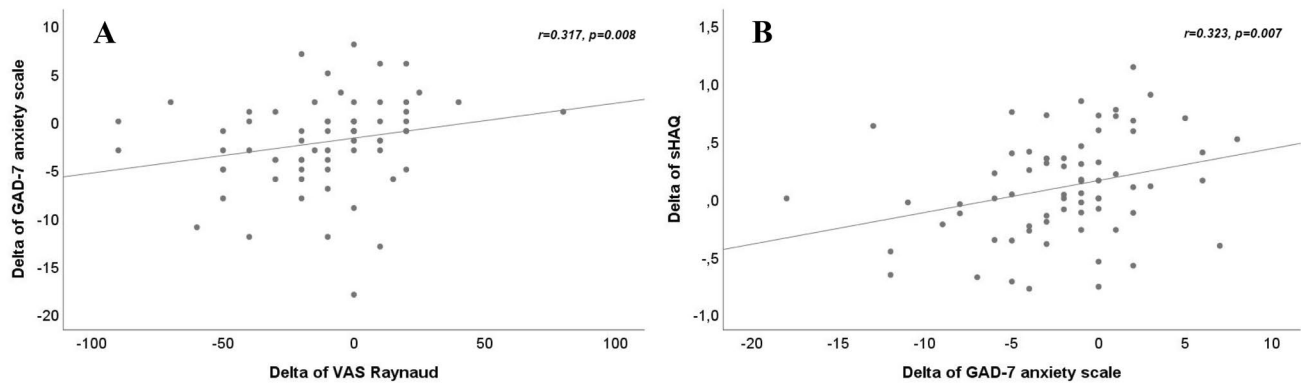


Fig. 1 **a** Correlation between delta of Generalized Anxiety Disorder 7 (GAD-7) and delta of Visual Analogue Scale (VAS) of Raynaud's phenomenon. **b** Correlation between delta of Generalized Anxiety

Disorder 7 (GAD-7) and delta of self-Health Assessment Questionnaire (sHAQ) score

During COVID-19 total lockdown, patients without a job referred more symptoms related to gastroesophageal reflux than patients employed. Lifestyle influences gastroesophageal reflux and intestinal symptoms. In the extraordinary and prolonged condition of COVID-19 lockdown, stay-at-home routine modifies cooking and eating habits of patients, often bringing to excess in preparation and consumption of food.

In SSc patients, anxiety and VAS of Raynaud's phenomenon increased during total lockdown. Emotional stress is an important trigger of vasospastic symptoms and the physicians should take care of the psychological aspect in this cohort of patients.

Compliance with ethical standards

Conflict of interest The authors declare no conflict of interests.

Statement of human and animal rights All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1975 Helsinki Declaration and its later amendments or comparable ethical standards. All the patients included in the clinical database gave consent to use their own data for research purposes. This article does not contain any studies involving animals performed by any of the authors.

Informed consent :informed consent was obtained from all individual participants included in the study.

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