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Letter to the Editor

Before SARS-CoV-2 Infection is Blamed for Sensory Disturbances, the Broad Spectrum of Differential Causes Needs to be Ruled Out

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We read with interest the article by Cantero *et al.* on a descriptive, cross-sectional, retrospective, observational study of 89 physicians from a single center who presented with sensory disturbances (hypoesthesia, paraesthesia, and hyperalgesia) after SARS-CoV-2 infection occurring between March 1st and July 25th 2020^[1]. A voluntary, anonymous survey was distributed via corporate email^[1]. The responder rate was 89/801^[1]. Eighteen percent of these patients had sensory disturbances^[1]. A significant relationship was found between the presence of paraesthesia and cough, fever, myalgia, asthenia, and dyspnoea^[1]. A significant relationship was also found between paresthesias and the need for treatment and admission due to COVID-19^[1]. Sensory symptoms were present from the fifth day of illness in 87.4% of cases^[1]. The study is compelling but has limitations that should be discussed.

The main limitation of the study is the design. A questionnaire about sensory symptoms has several disadvantages. First, complaints reported by the vaccinees are not objectified. They did neither undergo a clinical neurologic examination nor electrophysiological studies or a skin biopsy. Second, it is not ascertained that really the vaccinee and not somebody else answered. Third, those unfamiliar with electronic media, may not answer, because they are not familiar with the handling of the medium. Fourth, those severely ill from COVID-19 may not be capable physically to respond or to recognise the dimension of the questions, which cannot be controlled.

Another limitation of the study is that the type of sensory disturbances was limited to hypoesthesia, paraesthesia, and hyperalgesia^[1]. We should know why no other sensory modalities, such as hypo-/hyperthermia, hypo-/hyperalgesia, hypo-/hyperpallesthesia, or allodynia were included in the evaluation.

A third limitation is that psychogenic causes of sensory disturbances were not ruled out by application of depression scores. Since particularly health care professionals were under stress during the pandemic, it is conceivable that at least in some patients sensory disturbances were psychosomatic stress reactions.

A fourth limitation is that small fiber neuropathy (SFN) was not considered as the cause of sensory disturbances. SFN commonly presents with pain, sensory disturbances, and autonomic disturbances. These modalities are conducted via A-delta and C-fibers. SFN is increasingly recognised as a possible complication of SARS-CoV.2 infections and is easy to diagnose by skin biopsies.

The responder rate of 10% was low^[1]. What was the reason for this low responder rate?

Asthenia and myalgia were not mentioned in the method section. Why were they included in the evaluation? What is their relation to sensory disturbances?

Sensory disturbances can be the initial manifestation of severe CNS or PNS disease. How extensively were the included patients evaluated for the causes of sensory disturbances?

Overall, the interesting study has limitations that put the results and their interpretation into perspective. Addressing these issues would strengthen the conclusions and could improve the status of the study. Before SARS-CoV-2 infection is blamed for sensory disturbances, the broad spectrum of differential causes needs to be ruled out.

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