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The Increase in Pediatric Postural Orthostatic Tachycardia Syndrome During the Pandemic May be due to Autonomic Neuropathy as a Complication of SARS-CoV-2 infection

LETTER TO THE EDITOR

To the Editor,

We read with interest the article by Bilen et al[1] on a retrospective study of the frequency and severity of postural orthostatic tachycardia syndrome (POTS) before and during the SARS-CoV-2 pandemic in pediatric patients recruited between January 2018 and December 2023 at a tertiary center in Türkiye.[1] It was found that the incidence of POTS increased during the pandemic, which was attributed to less physical activity, high screen time, and an increased incidence of anxiety with palpitations.[1] It was concluded that POTS was more common in children during the pandemic due to lifestyle changes and psychosocial stress rather than malnutrition.[1] The study is noteworthy, but some points should be discussed.

The first point is that a retrospective design was used.[1] Retrospective designs have several disadvantages.[2] Since they are based on the evaluation of medical records that were not originally designed for the collection of data for research purposes, some information is inevitably missing. Selection and recall errors can also influence the results.[2]

The second point is that the prevalence of POTS and changes in its prevalence can only be assessed by examining and comparing a representative sample of the healthy population in the area from which the patients were recruited.

The third point is that small fiber neuropathy (SFN) was not considered a cause of POTS in the analyzed cohort.[1] The SFN predominantly affects A-delta and C fibers, which are components of the peripheral autonomic nervous system (ANS). Since autonomic neuropathy can be a cause of POTS,[3] it would have been crucial to test all included patients for the presence of SFN. Tests for diagnosing SFN include not only the tilt table test but also QSART, Sudoscan, sympathetic skin response, laser-evoked potentials, confocal corneal microscopy, and skin biopsy. Were any of the included patients tested for the presence of SFN?

The fourth point is that the number of patients infected with SARS-CoV-2 prior to the onset of POTS during the pandemic has not been reported.[1] Knowledge of the SARS-CoV-2 infection rate is crucial, as SARS-CoV-2 infection can be complicated by SFN neuropathy of the ANS.[4] The SFN is one of the most common causes of peripheral POTS, and patients may not show symptoms during the acute phase of infection but could have developed SFN as a manifestation of post-COVID syndrome.[5]

The fifth point is that the included patients were not tested for autonomic disorders other than POTS. Since SFN can affect more than just the fibers supplying the heart and arteries, we should know how many of the patients had pupil

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abnormalities, sicca syndrome, endocrine abnormalities, respiratory impairments, gastrointestinal motility disorders, or urogenital problems.

The sixth point is that anxiety was assessed but not systematically quantified using a standardized questionnaire or psychiatric examination. Therefore, anxiety should be excluded from the analysis.

Overall, SFN as a complication of SARS-CoV-2 infection should be considered a cause of pediatric POTS.

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