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Letter to the Editor

The Etiology and Pathophysiology of post-COVID Headaches are Diverse

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Letter to the Editor

We read with interest the article by Silva *et al*. on a population-based prospective cohort study on the prevalence of de novo post-COVID headache (PCH) in 448 patients [1]. The study is noteworthy, but several points should be discussed.

The first point is that the latency period between SARS-CoV-2 infection (SC2I) and the onset of PCH was not reported [1]. According to Figure 2, the prevalence of PCH increased from the first to the last follow-up [1]. How many of the 54 patients had PCH at the 3-month follow-up but did not report headaches at the 12- or 24-month follow-up? For the patients who reported headaches only at the 24-month follow-up, it is quite unlikely that they were related to the SC2I. What were the causes of the headaches in the patients who reported headaches only at the 24-month follow-up?

The second issue relates to the discrepancy between the aim of the study to characterize PCH and the statement in the methods section that "a structured clinical questionnaire was used to characterize headache pre-infection and 24 months post-infection" [1]. This discrepancy should be resolved.

The third point relates to the discrepancy between the method section, which states that patients were followed up for 3, 12 and 24 months, and the results section, which states that the median follow-up time was 30 months [1]. If patients were followed up for a maximum of 24 months, the median follow-up time cannot be 30 months. This contradiction needs to be resolved.

The fourth point is that the number of patients in whom central nervous system (CNS) involvement occurred during the acute phase of infection was not reported [1]. Knowing the prevalence of CNS involvement during the acute phase is crucial as it may be related to the prevalence of PCH. Individuals who experience meningitis, encephalitis, intracerebral hemorrhage, ADEM, stroke, VST, RCVS, or SAB during the acute phase are more likely to develop PCH than those who do not have CNS involvement during the acute phase of SC2I.

The fifth point is that it was not reported how many of the people with de novo headaches developed them after SARS-CoV-2 vaccination (SC2V) [1]. SC2V vaccination is known to be complicated by secondary headaches and in one third of these cases the headaches have a migraine-like character [2]. Since the vaccination rate in the 448 included patients was 97.2%, it is very likely that at least in some of the patients the headache was a complication of SC2V and not related to SC2I.

The sixth point is that the survey was conducted entirely (3-month follow-up) or partly (12- and 24-month follow-up) via telephone interviews. However, telephone interviews have several disadvantages, such as limited complexity of questions, difficulty in reaching respondents, potential interviewer bias, and time constraints [3]. In addition, they lack visual aids and can be perceived as intrusive, which can lead to a lower response rate [3].

The seventh issue is that it was not reported how many of those who had headaches before COVID-19 had a change in the type of headache between the pre- and post-infection period.

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