Long COVID: current definition

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Dear Editor

We have read with great interest the recent scoping review published in *Infection* journal by Akbarialiabad et al. [1]. This review covers relevant topics of long COVID such as definition, diagnosis, and treatment. The term long COVID is generally used for describing the presence of symptoms far longer than it would be expected after recovered from SARSCoV-2 infection whereas the term "long-hauler" is proposed for individuals suffering from long COVID. These authors concluded that controversies in long COVID definition impaired proper recognition and management of this condition [1]. In this letter to the Editor, we want to complement the current scoping review based on two integrative models proposed by our research group not included in Akbarialiabad et al. review [1].

Evidence has shown an unprecedent number of studies describing the presence of post-COVID symptoms. These studies have led to different meta-analyses reporting that around 60% of COVID-19 survivors will develop at least one post-COVID symptom after the infection. Some relevant points should be considered from current published meta-analyses: (1) they pooled prevalence rate of post-COVID symptoms without considering the follow-up period after infection (a total prevalence); (2) they also pooled prevalence rates without differentiating hospitalized from non-hospitalized patients; and (3) most of the included studies had follow-up periods ranging from 3 to 12 weeks after the infection.

It is currently known that post-COVID symptomatology is highly heterogeneous and more complex than expected, situation which could explain why no consensus in long COVID definition is yet available. Different authors have discussed aspects such as the needed or not of previous positive COVID-19 diagnosis [2] or specific timelines needed for considering symptoms as post-acute or chronic [3]. In a first model, Fernández-de-las-Peñas et al. defined four stages according to the period when a particular post-COVID symptom appears in relation to the acute phase of SARSCoV-2 infection: 1, potentially infection-related symptoms (up to 4–5 weeks after symptoms' onset), acute post-COVID symptoms (from week 5 to week 12 after symptom's onset), long post-COVID symptom (from week 12 to week 24 after), and persistent post-COVID symptoms (lasting more than 24 weeks after) [3]. This proposed timeline model integrates considerations appointed by several authors with the inclusion of terms such as post-acute or chronic post-COVID, and also differentiating between hospitalized/non-hospitalized patients or potential asymptomatic patients [3]. With current knowledge, we believe that persistent post-COVID and long-COVID are not appropriate terms to be used [3], and probably the term chronic post-COVID should be considered instead.

A second model also proposed by Fernández-de-las-Peñas et al. [4] was centered on the type and nature of any particular post-COVID symptom. In this model, post-COVID symptoms were defined as exacerbated (when a patient suffered from a particular symptom before SARSCoV-2 infection and this symptom worsens after), delayed-onset (a new symptom not experienced by a patient at the acute phase of the infection but appears after a latency period) or persistent (a new symptom experienced by a patient at the acute phase of the infection which persists without pain-free or remission periods) [4]. This model is based on a fluctuating or relapsing nature of post-COVID symptoms. The fluctuating nature of post-COVID symptoms is supported by single studies and also by a meta-analysis showing a decreased prevalence of post-COVID symptoms 30 days after hospitalization/onset, a posterior increase 60 days after but with another decrease > 90 days after [5]. This "roller coaster" of post-COVID symptoms should be longitudinally monitored throughout weeks, months or years after the infection.

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To conclude this letter, we would like to propose the current long COVID definition considering the timeline when the symptoms appear and/or resolve [3] and the nature of the symptoms [4]: long COVID should be used for defining the presence, in general, of any post-COVID symptom after surpassing the SARSCoV-2 infection (THE condition), and it will consist of two stages: (1) post-acute sequelae of SARSCoV-2 infection" (PASC) or acute post-COVID (from week 5 to week 12 after symptom's onset), and, (2) chronic post-COVID (lasting more than 12 weeks after). Further, the relapsing feature of post-COVID symptoms should be integrated in this updated definition since it will be relevant to determine the pattern (fluctuating or persisting) and nature (new-onset or exacerbated) of each particular symptom. Therefore, we propose the term long COVID for defining THE condition of suffering post-COVID symptomatology, and post-acute or chronic as the main stages of this fluctuating condition depending on the follow-up period where the symptoms appear.

Declarations

References

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