Reply: The Impact of Acute Illness Severity on Post–COVID-19 Sequelae Remains an Unsettled Question

From the Authors:

We are grateful for the comments of Konstantinidis and colleagues and welcome the opportunity to expand further on the results of our study on persistent ill health and respiratory recovery after coronavirus disease (COVID-19) (1). The primary aim of our study was to describe respiratory recovery and return to health across the spectrum of acute COVID-19 severity. For this reason, we invited both hospitalized and nonhospitalized patients to attend for follow-up. As highlighted by Konstantinidis and colleagues, there was a significant proportion of the nonadmitted patients who declined follow-up. We agree that patients who accepted appointments may overrepresent symptomatic individuals, resulting in an enriched study population. Indeed, we included this caveat in the limitations of our study.

The role of chest X-ray in the follow-up of patients following severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) recovery is central to the current recommended guidelines (2). As illustrated by Konstantinidis and colleagues, chest X-ray has been shown to correlate poorly with persistent ill health in studies following hospitalized patients (3, 4). Unsurprisingly, computed tomography (CT) has been shown to be more sensitive in the assessment of parenchymal disease in the aftermath of COVID-19. However, the collective findings of our study, as well as those of hospitalized patients, are that persistent ill health, fatigue, breathlessness, and adverse mental health outcomes are all common in COVID-19 recovery and are independent of objective measures of respiratory function during convalescence. Although CT changes have been shown to correlate with disease severity, their relationship with ongoing ill health has not been shown by either of the aforementioned studies. Thus, the clinical significance of CT abnormalities that are not appreciated on chest radiography remains unclear.

We agree that the inability to accurately predict those who will develop persistent ill health or identify those who may require follow-up at the time of initial infection has profound implications for the design of post–COVID-19 outpatient clinics. Prospective identification of those most at risk is a key research area. There is emerging evidence that number of symptoms during initial infection, rather than initial infection severity, may be associated with persistent symptoms (5). Ongoing studies are required to adequately design post–COVID-19 services.

An association between objective respiratory measures and medium-term clinical sequelae of COVID-19 has not been proved. This is perhaps unsurprising, given that the cardinal features of post–COVID-19 ill health (fatigue, breathlessness, anxiety, and cognitive dysfunction) are not typical features of chronic respiratory disease. However, studies into alternative causes for these symptoms have yet to bear fruit (6). We agree with Konstantinidis and colleagues that further work is needed to stratify survivors of COVID-19 for follow-up programs and that there is a need to identify the service best suited to provide follow-up for these patients. ■

Author disclosures are available with the text of this letter at www.atsjournals.org.

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