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Is newly diagnosed diabetes as frequent as preexisting diabetes in COVID-19 patients?

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Dear Editor,

Preexisting diabetes is a common comorbidity in coronavirus disease 2019 (COVID-19) patients [1–3]. Intriguingly, recent reports show that newly diagnosed diabetes is also frequently observed in these patients [4,5]. However, it is not known how the frequency of newly diagnosed diabetes compares with that of preexisting diabetes in COVID-19 patients. This is important to examine as newly diagnosed diabetes appears to be a stronger risk factor for severe illness from COVID-19 than preexisting diabetes [6].

In our recent systematic review and meta-analysis of eight studies with 3711 hospitalized COVID-19 patients, we showed that the pooled proportion of newly diagnosed diabetes was 14.4% (95% CI 5.9–25.8%) [4]. The same eight studies also provided data on preexisting diabetes, the history of which was ascertained from the electronic medical records. Here, we extend our meta-analysis to quantify the pooled proportion of preexisting diabetes and compare it with that of newly diagnosed diabetes. Details on the study eligibility criteria, search strategies, study screening, selection, data extraction, and quality assessment, and statistical methods used have been previously published [4]. There were 617

patients with preexisting diabetes in the included studies. The mean (or median) age of patients in these studies varied from 47 to 65 years, with the proportion of men ranging between 53% and 80%. The quality of most studies ($n = 6$) was good. The random-effects meta-analysis estimated the pooled proportion of preexisting diabetes as 14.8% (95% CI 8.1–23.0%) (Fig. 1). This is similar to that of newly diagnosed diabetes (14.4%, 95% CI 5.9–25.8%) derived from the same eight studies [4]. The reasons behind this intriguing finding are not known. COVID-19 virus may cause new-onset diabetes or unmask previously undiagnosed diabetes by injuring pancreatic β -cells, interfering with the insulin signalling pathways, or activating the renin-angiotensin system [5]. Newly diagnosed diabetes may also result from the increase in counterregulatory hormones (e.g., cortisol) and cytokines in response to the stress associated with severe illness or treatment with glucocorticoids [4,5].

This study shows that newly diagnosed diabetes may be observed as frequently as preexisting diabetes in hospitalized COVID-19 patients. It is essential that frontline healthcare workers recognize that newly diagnosed diabetes is a common phenomenon in COVID-19 patients [7] and they are a high-risk group [6] who should be managed early and appropriately to improve their prognosis.

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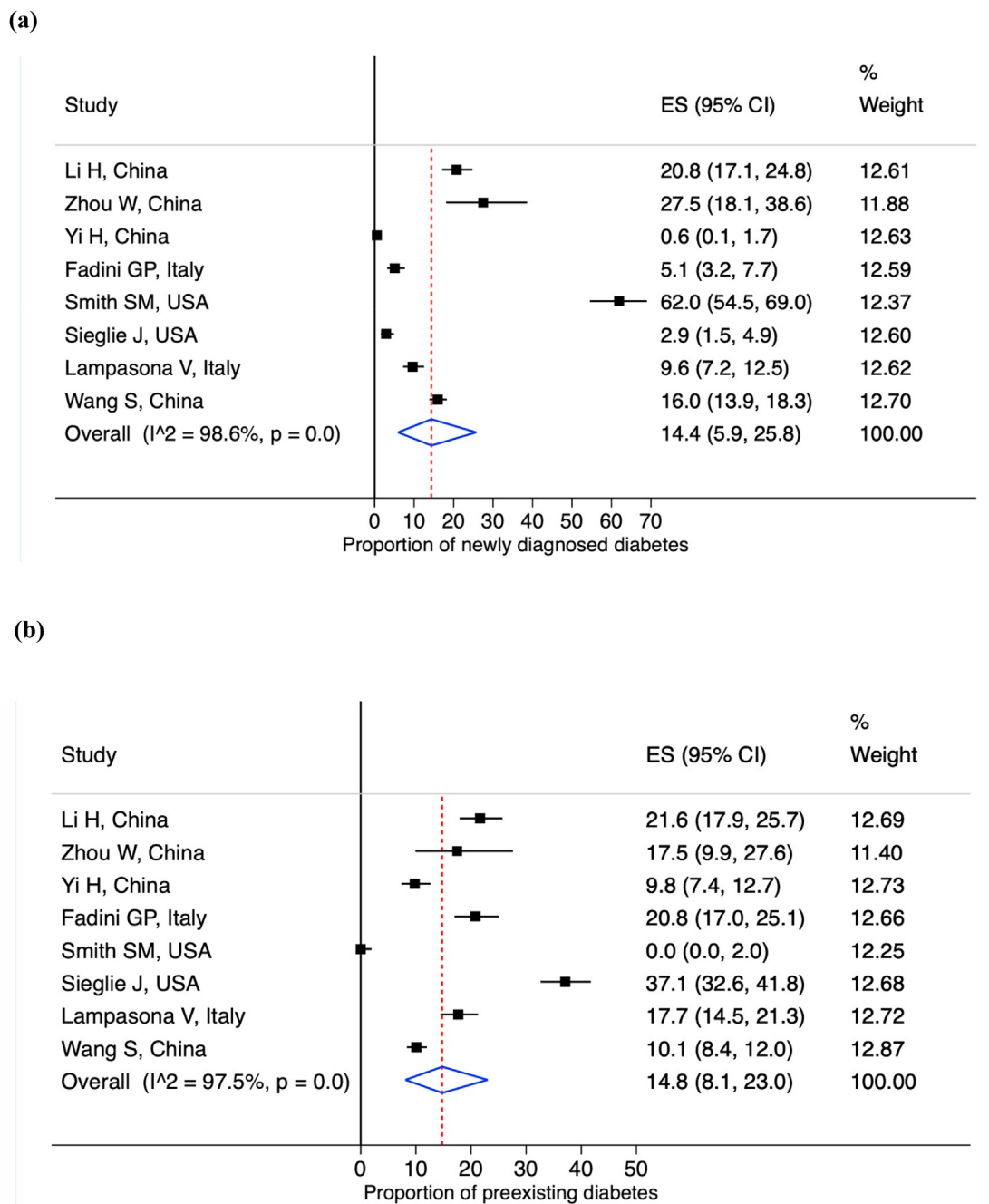


Fig. 1. Pooled proportion of newly diagnosed diabetes (a) and preexisting diabetes (b) in hospitalized COVID-19 patients.

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