Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

36,060 were male (48.5%); and 26,041 (35.1%), 19,945 (73.1%), and 8927 (12.0%) subjects had HSI-NAFLD, FLI-NAFLD, and claims-based NAFLD, respectively. During the observation period, 2251 (3.0%) tested positive for SARS-CoV-2, 438 (0.6%) had severe COVID-19 illness, and 45 (0.06%) suffered COVID-19-related deaths.

Subjects with HSI-NAFLD had a high risk of COVID-19 infection (1413/48,203 [2.9%] for subjects without HSI-NAFLD vs 838/26,041 [3.2%] for those with HSI-NAFLD; adjusted odds ratio [aOR], 1.12; 95% confidence interval [CI], 1.03–1.22), severe COVID-19 disease (259/48,203 [0.5%] vs 179/26,041 [0.7%]; aOR, 1.25; 95% CI, 1.03–1.52), and significant COVID-19-related deaths (21/48,203 [0.04%] vs 24/26,041 [0.09%]; aOR, 2.22; 95% CI, 1.18–4.00). We found similar trends when we used FLI to define NAFLD. Subjects with FLI-NAFLD had higher risk for SARS-CoV-2 infection (561/17,421 [3.2%] for subjects without FLI-NAFLD vs 629/17,421 [3.5%] for those with FLI-NAFLD; aOR, 1.26; 95% CI, 1.14–1.37), severe COVID-19 infection (290/54,299 [0.5%] for subjects without FLI-NAFLD vs 148/19,945 [0.7%] for those with FLI-NAFLD; aOR, 1.41; 95% CI, 1.16–1.73), and COVID-19-related death (25/54,299 [0.05%] for subjects without FLI-NAFLD vs 20/19,945 [0.10%] for those with FLI-NAFLD; aOR, 2.25; 95% CI, 1.25–3.98). Subjects classified as NAFLD based on claims seemed to have higher risk for COVID-19 (1925/65,317 [3.0%] for subjects without claim-based NAFLD vs 323/8830 [3.7%] for those with claim-based NAFLD; aOR, 1.16; 95% CI, 1.02–1.31) and severe COVID-19 progression (349/65,317 [0.5%] for subjects without claim-based NAFLD vs 89/8927 [1.0%] for those with claim-based NAFLD; aOR, 1.70; 95% CI, 1.33–2.15) than non-NAFLD subjects (Figure 1).

Through a large-scale, population-based, nationwide cohort study, we investigated the potential association between the presence of NAFLD and risk of SARS-CoV-2 test positive and COVID-19 severity and mortality. We identified that the NAFLD was associated with a higher risk of SARS-CoV-2 infectivity and COVID-19 severity among 74,244 subjects who underwent SARS-CoV-2 testing in South Korea. Our results suggest that physicians should exercise extra care and give more attention to COVID-19 patients with preexisting NAFLD.[8]

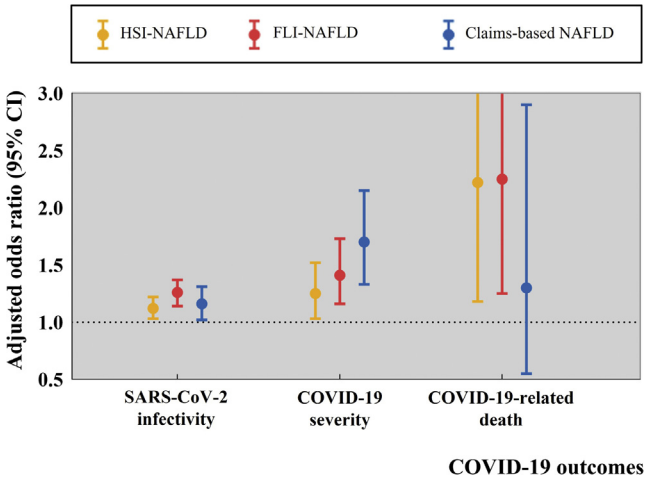

Figure 1. Summary of the main study findings.

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Conflicts of interest
The authors disclose no conflicts.

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Reply. The pandemic and inextricable relationship of COVID-19 and nonalcoholic fatty liver disease (NAFLD) have raised worldwide concerns. Although there was no population-based cohort study, some studies indicated NAFLD plays a role in the outcome of COVID-19 and is an independent predictor of severe COVID-19.[1-3] So we read with great interest the cohort study conducted by Yoo et al[4] regarding the effect of NAFLD on COVID-19-related outcomes.

However, we have some concerns. As shown in the study, the proportion of NAFLD was high (up to 73.2%) and individuals might have been misclassified as NAFLD in this study. More importantly, liver enzymes are important component of criteria used to define NAFLD; patients with SARS-CoV-2 infection are prone to elevated liver enzymes. It is likely that subjects classified as NAFLD based on claims-based definition were more likely to have NAFLD than those classified based on other criteria. Because patients with claims-based NAFLD had higher infection risk and severe progression for COVID-19 than subjects without claims-based NAFLD, then why was there no higher mortality in patients with claims-based NAFLD. Moreover, it is unclear if patients with hepatitis B virus, hepatitis C virus, and HIV were excluded from the analysis.

We also have doubts about a few values. For example, there were 2251 cases who tested positive for SARS-CoV-2 (beginning of results section). However, there were 561/629 COVID-19 cases reported in subjects without/with fatty liver index NAFLD; these were 1925/323 COVID-19 cases reported in subjects without/with claims-based NAFLD, respectively. Besides, neither the number of COVID-19 nor the number of NAFLD was consistent within the groups classified by fatty liver index and claims-based NAFLD.

In addition, a preliminary analysis was conducted in all the NAFLD population, but not among subgroups. Previous research reported the liver fibrosis in NAFLD might represent an additional and independent risk factor for severe COVID-19 illness.[1] It would be interesting to analyze the relationship between different degrees of fatty liver and SARS-CoV-2 infectivity by longitudinal observation.

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Predicting Need for Aggressive Endoscopic Therapy After Endoscopic Ultrasound–Guided Drainage of Pancreatic Fluid Collections With Lumen Apposing Metal Stents

Dear Editor:

We read with interest the study by Chandrasekhara et al[1] that attempted to identify the factors associated with pancreatic fluid collections (PFCs) that could predict the need of step-up therapy after endoscopic ultrasound (EUS)-guided drainage with lumen apposing metal stents. We congratulate the authors for conducting this elegant study that has demonstrated that PFCs that are >10 cm in size, have paracolic extension, or contain >30% solid necrosis are more likely to require step-up therapy including direct endoscopic necrosectomy (DEN). PFCs following acute pancreatitis (AP) are a heterogenous group of collections varying in their size, extent, and content and therefore success of endoscopic or percutaneous drainage (PCD) along with the need of additional procedures are likely to depend on the morphologic features of PFCs.

We have also previously assessed the impact of morphologic features of PFCs on the outcome of EUS-guided transmural drainage. In a retrospective study involving 43 patients of walled off necrosis treated with multiple transmural plastic stents, we found that PFCs having >40% solid debris either needed DEN or surgical necrosectomy.[2] Also, with increasing size of collection ($r = 0.320$; $P = .047$) and amount of solid debris ($r = 0.800$; $P < .001$), there was a significant increase in the number of endoscopic procedures required for successful outcome. Also, in a recent comparative study of 170 patients with PFCs who underwent EUS-guided transmural drainage either within 4 weeks of onset of AP (early group) or ≥4 weeks of onset of AP (delayed group), we reported that PFCs were significantly larger (12.3 ± 2.1 cm vs 10.5 ± 2.7 cm; $P < .001$) with increased solid component (47.7 ± 8.9% vs 28.3 ± 11.7%; $P < .001$) in early group and DEN was performed more frequently in early group (50% vs 7.4%; $P < .001$).[3] Therefore, the timing of drainage after onset of AP can also impact the need of additional interventions because PFCs have been demonstrated to get liquefied with time.[4]