

Letter: prevalence and patterns of gastrointestinal symptoms in a large Western cohort of patients with COVID-19

EDITORS,

Tian et al have reviewed gastrointestinal characteristics of 2023 patients with COVID-19 described in case reports and retrospective cohort studies.¹ The prevalence of gastrointestinal symptoms varied extensively among different studies (3%-79%), which were all retrospective and from Eastern countries. The authors acknowledged that the retrospective design of included studies could have led to some selection bias.

Here, we report findings from a prospective cross-sectional study of prevalence and patterns of gastrointestinal symptoms, assessed through the Gastrointestinal Symptoms Rating Scale (GSRS),² in all patients with COVID-19 (diagnosed with nasopharyngeal swab and RT-PCR for SARS-CoV-2) hospitalised at our centre up to 15 April 2020. We excluded patients with a critical clinical picture at admission and those with recent (15 to 30 days before the start of COVID-19 symptoms) history of gastrointestinal symptoms or clinically active gastrointestinal disease. All patients who did not present with gastrointestinal symptoms at diagnosis repeated the GSRS questionnaire 48-72 hours after the start of COVID-19 therapy. Clinical pictures were defined according to recommendations from the Chinese Center for Disease Control and Prevention.

We have enrolled 420 patients (M = 238, F = 182, median age 61). Of these, 247 (59%) reported at least one gastrointestinal symptom, of which the most common were diarrhoea (37%), nausea (19%), urgency (17%), loose stools (16%) and upper abdominal pain (14%). At the GSRS evaluation, the highest mean scores were for urgency (mean = 4), diarrhoea (mean = 3.8), nausea (mean = 3.6), and loose stools (mean = 3.4).

117 patients (47% of the overall cohort) presented with gastrointestinal symptoms at admission, while 130 (53%) became symptomatic only after the start of COVID-19 therapy, which included anti-virals (n = 318, 76% of the overall cohort), hydroxychloroquine (n = 314, 75% of the overall cohort), antibiotics (n = 231, 55% of the overall cohort), anti IL-6 agents (n = 105, 25% of the overall cohort).

Upper gastrointestinal symptoms, including heartburn (15/117 vs 4/130, $P = 0.007$), acid reflux (15/117 vs 6/130, $P = 0.02$), hunger pains (10/117 vs 1/130, $P = 0.003$), nausea (43/117 vs 35/130, $P = 0.04$) and rumbling (11/117 vs 3/130, $P = 0.02$), were more frequent at admission, while diarrhoea appeared more commonly after

therapy (57/117 vs 98/130, $P < 0.0001$). Finally, through multivariate analysis, gastrointestinal symptoms (OR 2.35, 95% IC 1.04 to 5.3, $p = 0.04$) were independent predictors of a critical clinical picture.

In conclusion, this is the largest prospective Western cohort to describe the prevalence and patterns of gastrointestinal symptoms in patients with COVID-19 so far. Through a validated scoring system, we found that gastrointestinal symptoms are present in a large proportion of patients with COVID-19, but that they appear only after the start of COVID-19 related therapy in nearly a half of patients. We also found two different patterns of symptoms according to the timing of appearance (at admission vs after therapy). Finally, we found that gastrointestinal symptoms could predict a worse clinical picture. Further clinical and translational studies are advocated, respectively, to confirm our findings and to address their nature through a mechanistic approach.

ACKNOWLEDGEMENT

Declaration of personal interests: AG reports personal fees for consultancy for Eisai S.r.l., 3PSolutions, Real Time Meeting, Fondazione Istituto Danone, Sinergie S.r.l. Board MRGE, and Sanofi S.p.A, personal fees for acting as a speaker for Takeda S.p.A, AbbVie, and Sandoz S.p.A, and personal fees for acting on advisory boards for VSL3 and Eisai. None of the other authors has conflicts of interest to disclose.

Conflict of interests: None of the Authors has conflicts of interest to declare.

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