

INTRODUCTION

Since acute infective gastroenteritis may cause post-infection irritable bowel syndrome (PI-IBS) and functional dyspepsia (FD) and the Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2) affects the gastrointestinal (GI) tract, Corona Virus Disease-19 (COVID-19) may cause PI-functional GI disorders (FGID). However, there is no published study on this yet.

We prospectively studied the frequency and spectrum of PI-FGIDs among COVID-19 and healthy controls, and the risk factors for its development.

AIM

- To study the frequency and the spectrum of PI-FGID following COVID-19 and healthy controls
- To study the comparison of the frequency of PI-FGID among symptomatic and asymptomatic patients with COVID-19, and
- To study the factors associated with the development of post-COVID-19 FGIDs

METHOD

- 280 (164 [58.6%] symptomatic and 116 [41.4%] asymptomatic) patients with COVID-19 and 264 healthy controls were followed up at 1, and 3 months using Hindi- and Bengali-translated validated Rome Questionnaires for the development of chronic bowel dysfunction (CBD), dyspeptic symptoms, and their overlap and at 6-month for IBS, FD and their overlap.
- Psychological comorbidity was studied using the Rome III Psychosocial Alarm Questionnaire.

RESULTS

- At 1-, and 3-months, 16 (5.7%), 16 (5.7%), 11 (3.9%) and 24 (8.6%), 6 (2.1%), 8 (3.2%) developed CBD, dyspeptic symptoms, and their overlap, respectively; among healthy controls, none developed dyspeptic symptoms and one developed CBD at 3-month ($p < 0.05$).
- At six-month, 15 (5.3%) (Rome III, 14 also fulfilled Rome IV criteria), 6 (2.1%), and 5 (1.8%) of the 280 COVID-19 patients developed IBS, FD, and IBS-FD overlap, respectively and only one healthy control developed IBS at 6-months ($p < 0.05$ for all except IBS-FD overlap).
- The risk factors for post-COVID-19 FGIDs at 6-month included the presence of symptoms, particularly GI, anosmia, ageusia, and presence of CBD, dyspeptic symptoms or their overlap at 1 and 3-months and the psychological comorbidity.

CONCLUSIONS

- The current study findings document the earlier published hypothesis that COVID-19 might lead to post-COVID-19 FGIDs.
- The current study is the first to document this. Post-COVID-19 FGIDs may pose a significant economic, social, healthcare burden to the world, considering the massive load of COVID-19 during this pandemic.

REFERENCES

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- Schmulson M, Ghoshal UC, Barbara G. Managing the Inevitable Surge of Post-COVID-19 Functional Gastrointestinal Disorders. *Am J Gastroenterol* 2021;116:4-7.

Fig1. Venn diagrams showing chronic bowel dysfunction (CBD), dyspeptic symptoms, and their overlap at one, and three months and irritable bowel syndrome (IBS), functional dyspepsia (FD) and their overlap at six months follow-up

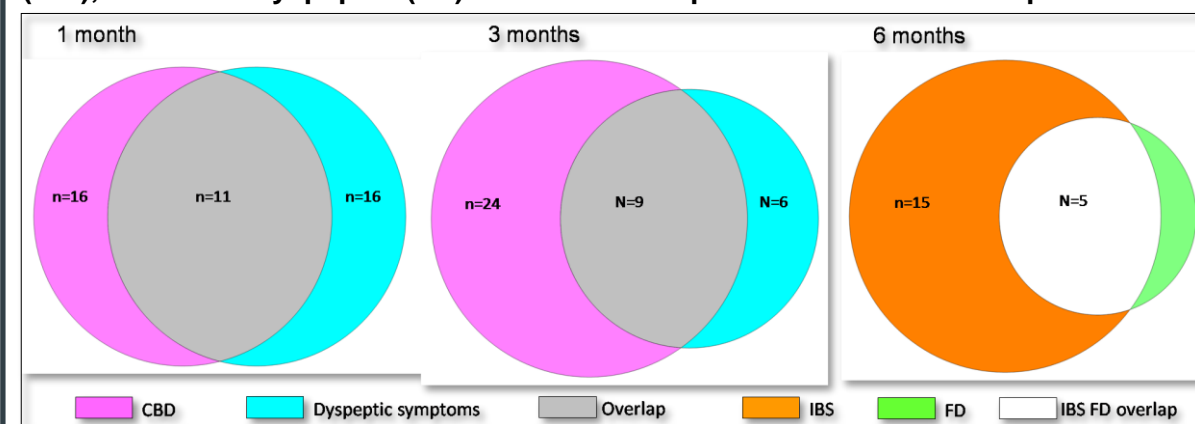


Fig 2. Kaplan-Meier curves showing the development of functional gastrointestinal disorders

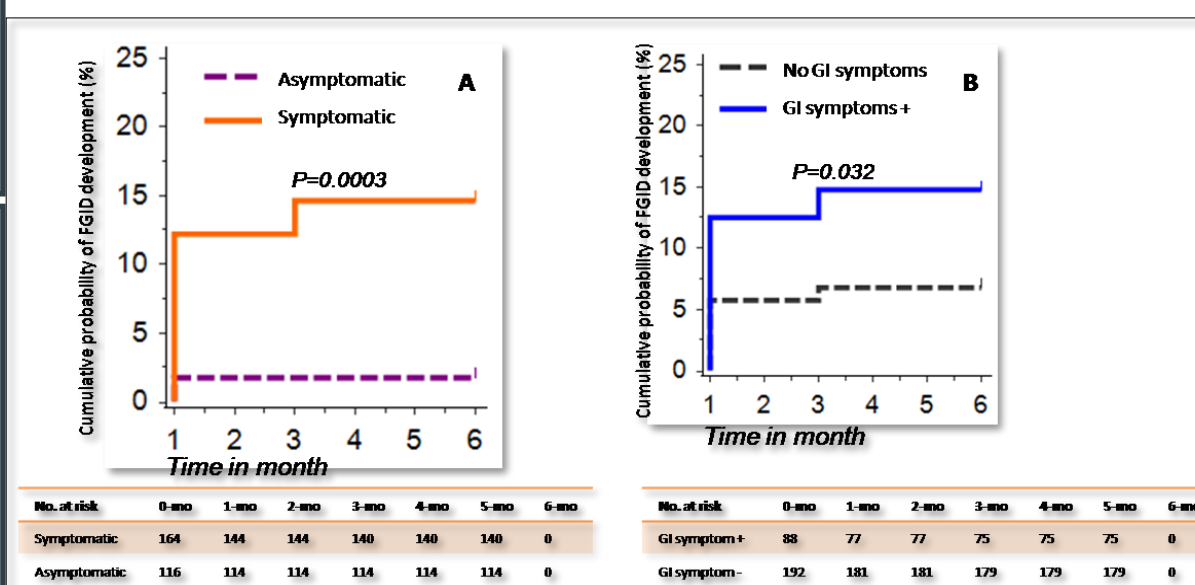


Table 1. Relationship between presence of GI symptoms and development of post-COVID-19 GI consequences (CBD, dyspeptic symptoms, IBS, FD and their overlap)

Parameter	GI symptoms with or without anorexia (n=8)	Anorexia alone (n=48)	GI symptoms absent (n=144)	P-value
Presence of CBD, dyspeptic symptoms and their overlap at 1-mo				
CBD only	8 (9.1%)	6(12.5%)	2(1.4%)	<0.001
Dyspeptic symptoms only	10 (11.4%)	4(8.3%)	2 (1.4%)	
Overlap	9 (10.2%)	1 (2.1%)	1 (0.7%)	
None	61 (69.3%)	37 (77.1%)	139 (96.5%)	
Presence of CBD, dyspeptic symptoms and their overlap at 3-mo				
CBD only	14 (15.9%)	8 (16.6%)	2(1.4%)	<0.001
Dyspeptic symptoms only	2 (2.3%)	1(2.1%)	3(2.1%)	
Overlap	7 (8%)	1(2.1%)	1(0.7%)	
None	65 (73.9%)	38 (79.2%)	138 (95.8%)	
Presence of IBS, FD and their overlap at 6-mo				
IBS	6 (6.8%)	7 (14.6%)	2(1.4%)	0.0002
FD	2(2.3%)	2 (4.2%)	2(1.4%)	
IBS-FD overlap	5 (5.7%)	0(0%)	0(0%)	
None	75 (85.2%)	39 (81.2%)	140(97.2%)	