Comparison of Disorders of Gut-Brain Interaction and Gastrointestinal Motility Between Patients with and without IBD

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INTRODUCTION

- Disordered brain-gut axis has been implicated in the pathogenesis of inflammatory bowel disease (IBD) and functional gastrointestinal disorders.
- Patients can have overlapping IBD and irritable bowel syndrome (IBS)
- The prevalence of concomitant gastrointestinal motility disorders of gut-brain interaction (DGBI) in patients with IBD is not fully elucidated.

AIM

- Determine the prevalence of DGBI in patients with Crohn's disease (CD) and ulcerative colitis (UC).

METHOD

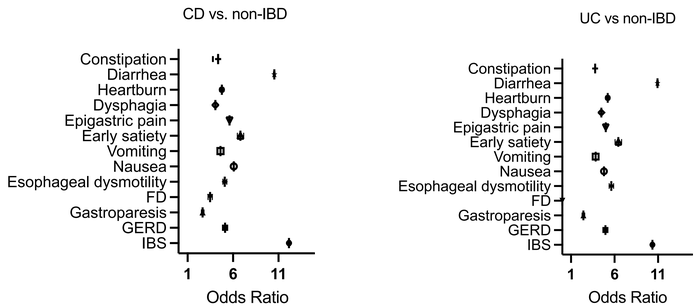
- A population-based study was performed using IBM Explorys (1999-2022), a large pooled de-identified database with a patient information from more than 300 hospitals across the US
- CD and UC cohorts consisted of patients with a diagnosis of CD and UC, respectively
- The control group consisted of patients without a diagnosis of IBD.
- We collected information about gastroparesis, IBS, functional dyspepsia (FD), gastroesophageal reflux disease (GERD), esophageal dysmotility and GI symptoms in all three cohorts.
- Categorial data was presented as number of subjects and percentages.
- Odds ratio (OR) at 95% confidence interval was reported.

RESULTS

- CD, UC and the non-IBD control cohorts consisted of 209,660, 251,570 and 79,390,670 patients respectively.
- Both CD and UC were more likely to have other co-existing DGBI and motility disorders compared with non-IBD patients, including IBS, GERD, gastroparesis, and esophageal dysmotility.
- FD was more likely to occur in patients with CD than the control, while UC has less risk of FD than the control
- Both patients with CD and UC were more likely to complain about various GI symptoms than the control, including nausea, vomiting, early satiety, epigastric pain, dysphagia, heartburn, diarrhea, and constipation ($p<0.0001$).

Table 1 Disorders of gut-brain interaction and gastrointestinal motility in patients with IBD

	CD (N=251,570)		UC (N=209,660)		Control (n=79,390,670)		CD vs control		UC vs control	
							OR	P	OR	P
IBS	33330	13.2%	24120	11.50%	984250	1.24%	12.02-12.31	< 0.0001	10.22-10.50	< 0.0001
GERD	83530	33.2%	67940	32.40%	7004850	8.82%	5.09-5.18	< 0.0001	4.91-5.00	< 0.0001
Gastroparesis	1410	0.6%	1070	0.51%	167720	0.21%	2.53-2.81	< 0.0001	2.28-2.57	< 0.0001
FD	790	0.3%	0	0.00%	71770	0.09%	3.25-3.73	< 0.0001	0.00-0.04	< 0.0001
Esophageal dysmotility	2050	0.8%	1890	0.90%	127820	0.16%	4.88-5.32	< 0.0001	5.39-5.90	< 0.0001
Nausea	73350	29.2%	51380	24.51%	5036360	6.86%	6.02-6.13	< 0.0001	4.74-4.84	< 0.0001
Vomiting	59580	23.7%	42850	20.44%	4996190	6.81%	4.58-4.66	< 0.0001	378-3.87	< 0.0001
Early satiety	1500	0.6%	1180	0.56%	69760	0.10%	6.48-7.18	< 0.0001	6.07-6.82	< 0.0001
Epigastric pain	30350	12.1%	22810	10.88%	1894830	2.58%	5.54-5.68	< 0.0001	4.92-5.06	< 0.0001
Dysphagia	20120	8.0%	18390	8.77%	1664800	2.27%	4.00-4.12	< 0.0001	4.42-4.56	< 0.0001
Heartburn	7490	3.0%	6810	3.25%	506700	0.69%	4.67-4.89	< 0.0001	5.10-5.36	< 0.0001
Diarrhea	86060	34.2%	73500	35.06%	3731830	5.08%	10.45-10.63	< 0.0001	10.85-11.04	< 0.0001
Constipation	43000	17.1%	31800	15.17%	3585490	4.89%	4.31-4.40	< 0.0001	3.74-3.83	< 0.0001



CONCLUSIONS

- IBD is associated with an increased prevalence of concomitant DGBI and motility disorders than non-IBD cohorts.
- IBD patients experience GI symptoms more often than non-IBD patients.

REFERENCES

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