

Demographics, Colonic Transit, and Quality of Life Among Patients with Bile Acid Diarrhea with and without History of Cholecystectomy

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INTRODUCTION

About 30 percent of patients with irritable bowel syndrome (IBS) have the diarrhea predominant subtype (IBS-D)¹, and 25-50% of patients with IBS-D have bile acid diarrhea (BAD).² Moreover, cholecystectomy (CCY) may result in BAD.³ Among those with IBS-D, those with BAD have more rapid colonic transit⁴ and worse quality of life (QOL) and symptoms.⁵ Separately, 32% of patients with history of CCY report increase in diarrheal symptoms.⁶ However, the impact of CCY on patients with IBS-D and BAD remains unknown.

AIM

Compare demographics, transit, and QOL in patients with IBS-D and BAD with and without history of CCY.

METHODS

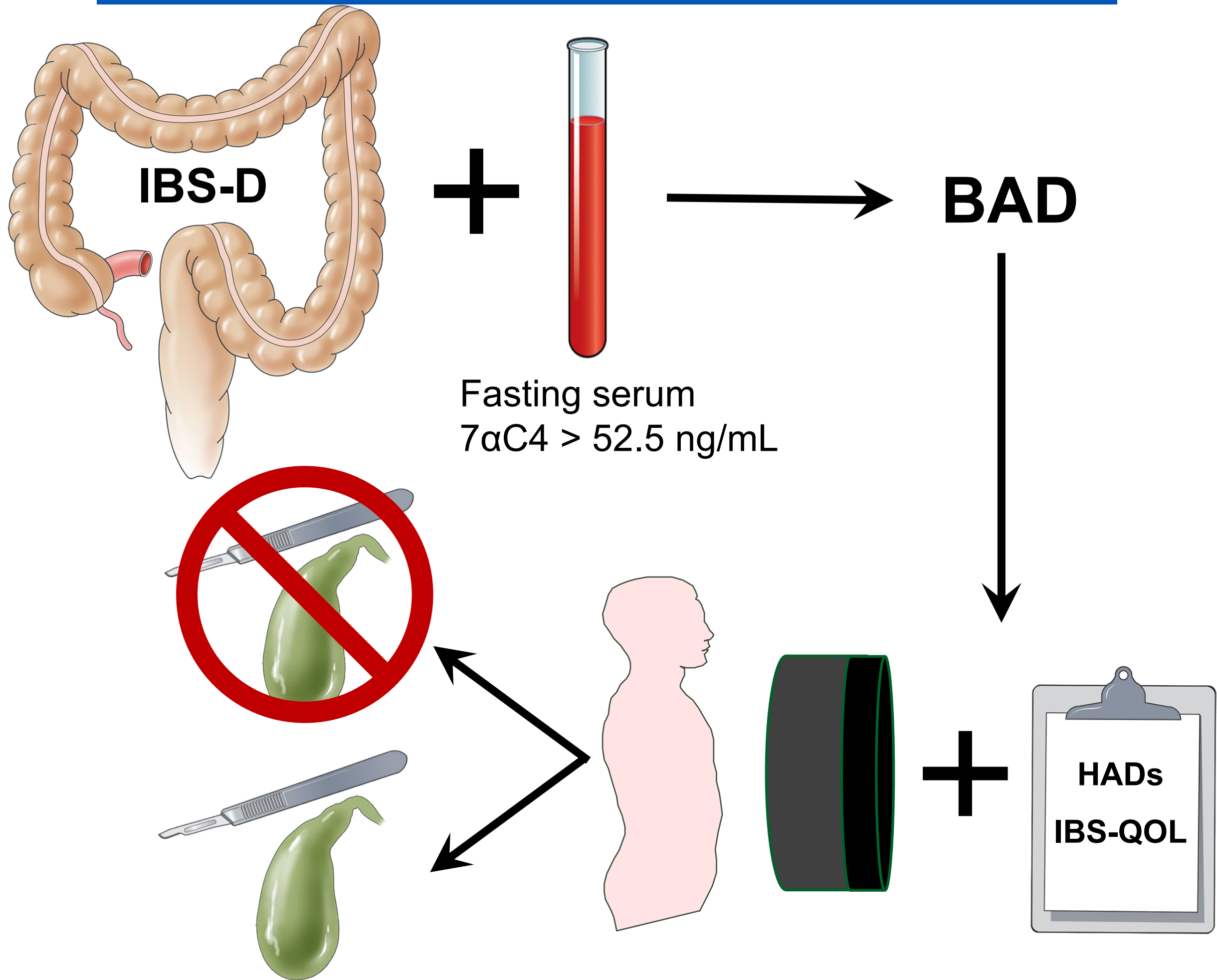


TABLE 1. COMPARISON OF GROUPS.

Characteristics [median (IQR) or N (%)]	BAD (n = 44)		p-value
	Prior CCY (n = 16)	No CCY (n = 28)	
Number, % female	16 (100%)	28 (75%)	0.029
Age, years	56.5 (41.5, 65.0)	39.5 (33.5, 53.5)	0.024
Body mass index, kg/m ²	34.5 (32.4, 39.4)	31.8 (28.4, 36.4)	0.090
Serum FGF-19, pg/mL	59.8 (25.1, 91.7)	59.1 (31.1, 110.6)	0.868
Serum 7αC4, ng/mL	74.3 (61.7, 104.0)	73.2 (60.0, 87.4)	0.508
Total fecal bile acids, μmol/g stool	4.9 (2.9, 6.7)	3.7 (2.4, 4.5)	0.097
Fecal primary bile acids (CDCA + CA), %	6.5 (1.0, 31.8)	20.0 (1.8, 53.8)	0.281
Colonic geometric center at 8 hours	1.4 (1.0, 2.9)	1.2 (0.6, 1.6)	0.238
Colonic geometric center at 24 hours	3.6 (2.2, 4.4)	3.4 (2.6, 3.8)	0.696
Ascending colon emptying T _{1/2} , hours	11.0 (4.4, 16.8)	13.9 (7.6, 18.1)	0.261
HADS total score >7, N (%)	7 (43.75)	16 (57.14)	0.294
HADS depression score >7, N (%)	1 (6.3)	3 (10.7)	0.537
HADS anxiety score >7, N (%)	6 (37.5)	6 (21.43)	0.211
IBS-QOL, composite score*	32.0 (16.5, 44.9)	29.8 (17.6, 44.1)	0.930

TABLE 2. IBS QOL.

BAD (n = 44)			
	Prior CCY (n = 16)	No CCY (n = 28)	p-value
“I worry about losing control of my bowels.”			
Not at all	6.3%	25.9%	0.0296
Slightly	12.5%	25.9%	
Moderately	12.5%	11.1%	
Quite a bit	37.5%	22.2%	
A great deal	31.3%	14.8%	
IBS Quality of Life subscale scores [mean (SD)]			
Dysphoria	35.55 (25.46)	32.35 (28.06)	0.7108
Interference w/ activity	48.10 (23.34)	40.67 (24.11)	0.3290
Body image	25.00 (18.96)	26.16 (17.68)	0.8409
Health worry	24.48(15.36)	22.22 (15.85)	0.6504
Food avoidance	50.00 (31.33)	52.77 (33.51)	0.7893
Social reaction	21.09 (21.64)	34.13 (22.72)	0.7034
Sexual	21.88 (26.02)	21.30 (24.96)	0.9427
Relationships	18.75 (20.07)	26.23 (25.81)	0.3261

Table 1 (above). Data presents the baseline demographic variables and overall study outcomes for those with and without a history of cholecystectomy. Notably, the groups differed significantly by percentage female (though both were >75%) and age (those with cholecystectomy were older). There were no significant differences in bile acid parameters, colonic transit, or questionnaire scores. BAD, bile acid diarrhea; CA, cholic acid; CCY, cholecystectomy; CDCA, chenodeoxycholic acid; FGF-19, fibroblast growth factor 19; HADS, Hospital Anxiety and Depression Screen; IBS, irritable bowel syndrome; QOL, quality of life

Table 2 (left). Data presents the distribution of a question on the IBS-QOL that was statistically significantly different between the groups along with the response distributions. The IBS-QOL subscale scores are summarized beneath, with no significant differences in responses observed. Data above analyzed using Wilcoxon Rank Sum test for difference in response distribution and students t-test for mean subscale scores. BAD, bile acid diarrhea; CCY, cholecystectomy; IBS, irritable bowel syndrome.

DISCUSSION

Patients with IBS-D and BAD with history of CCY worry more frequently about fecal incontinence compared to those without CCY. However, they do not appear to have significant differences in colonic transit based on prior history of CCY. Despite a third of all patients with CCY reporting worse diarrheal symptoms, history of this operation does not appear to cause significantly worse QOL among those that have BAD. Our study noted more advanced age, a higher proportion of females, and greater BMI among those with CCY, which is consistent with CCY risk factors.

CONCLUSION

History of CCY does not appear to be associated with differences in colonic transit time, but may be associated with fear of loss of bowel control, and potentially impact on QOL via the need to be close to a toilet.

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