Inflammatory Bowel Disease Patients Commonly But Inconsistently Change Diet For Flares

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INTRODUCTION

- Understanding the impact of diet on IBD symptoms is a growing area of interest for patients and physicians.
- Changes in diet may alter environmental exposure, modulate the microbiome, and improve gut barrier permeability.
- Despite ongoing research, the optimal dietary changes during times of flares remain uncertain.

AIMS

To better understand the current dietary intake of our IBD patients and the relationship between diet changes and disease activity.

METHODS

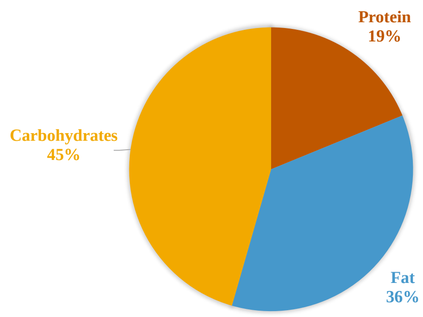
- Prospective, multi-center, cross-sectional study of eating habits and preferences was performed in a cohort of IBD patients at two academic gastroenterology practices:
  - Dell Medical School at UT Austin
  - Yale New Haven Medical Center
- Automated Self-Administered 24-hour diet recall tool and Fat and Fiber Behavior Questionnaire were used to estimate daily nutrient intake.
- Healthy Eating Index-2015 (HEI), a measure of diet quality used to assess how well a set of foods aligns with key recommendations of the Dietary Guidelines for Americans scored 0-100 like a school grade, was calculated.
- Disease activity was assessed using the Harvey Bradshaw Index (HBI; for Crohn's disease) and Simple Clinical Colitis Activity Index (SCCAI; for UC). Active disease defined by:
  - HBI ≥ 5
  - SCCAI >2.5

RESULTS

Table 1: Comparison of baseline characteristics between patients with active and inactive disease (based on disease activity scores, HBI or SSCAI).

	Inactive disease n=21	Active disease n=7
Age (years)	33.3	29.1
Sex (%male)	9 (43%)	3 (43%)
Race		
White	14 (67%)	6 (86%)
Black	0 (0%)	0 (0%)
Asian	1 (5%)	0 (0%)
Declined to answer	6 (29%)	1 (14%)
Ethnicity		
Hispanic	0 (0%)	1 (14%)
Non-Hispanic	16 (76%)	5 (71%)
Declined to answer	5 (24%)	1 (14%)
Payor		
Uninsured	0 (0%)	1 (14%)
Commercial – PPO	14 (67%)	4 (57%)
Commercial - HMO	4 (19%)	2 (29%)
Medicare	0 (0%)	0 (0%)
Medicaid	1 (5%)	0 (0%)
No data	2 (10%)	0 (0%)
Body mass index (kg/cm^2)	23.4	21.5
Type of IBD		
Crohn's disease	15 (71%)	3 (43%)
Ileal	5 (33%)	1 (33%)
Ileocolonic	8 (53%)	1 (33%)
Colonic	2 (13%)	1 (33%)
Ulcerative colitis	4 (19%)	4 (57%)
Proctitis	0 (0%)	0 (0%)
Left sided	2 (50%)	1 (25%)
Extensive	2 (50%)	3 (75%)
IBDU	2 (10%)	0 (0%)
Crohn's behavior		
Inflammatory	8 (53%)	1 (33%)
Stricturing	6 (40%)	1 (33%)
Penetrating	1 (7%)	0 (0%)
Unknown	0 (0%)	1 (33%)
UGI Crohn's	2 (13%)	0 (0%)
Perianal disease	3 (20%)	2 (67%)
Disease duration (years)	9.5	6.6
Age at diagnosis	24.5	22.7
Prior IBD Surgery	1 (5%)	2 (29%)

Figure 1: Macronutrient Breakdown of Average Daily Diet of IBD patients



**Data from CDC.gov (2020-2021) reports average American dietary intake for adults aged 20 and over: Carbohydrates 46-47%, Protein 16%, Fat 36%

Figure 2: A majority of patients report that they change their diet for flare-ups of their IBD.

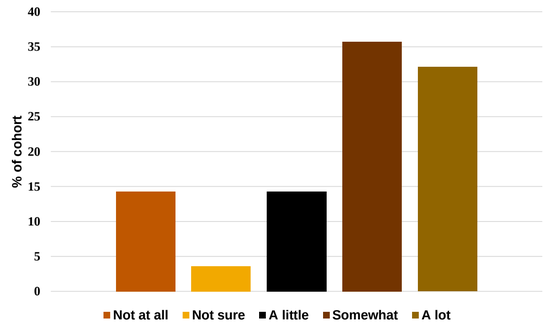


Table 2: Analysis of diet intake between patients with active and inactive disease (based on HBI or SSCAI)

	Inactive disease n=21	Active disease n=7	*p*-value
Healthy Eating Index – 2015 Score	53.5 ± 16.0	53.4 ± 19.3	.99
Self-reported diet changes with flare (Likert scale 1-5, 1=no change, 5=a lot of change)	3.4 ± 1.5	4 ± 1.4	.38
Dietary Component			
Total Calories (kcal)	2126 ± 1062	1715 ± 764	.47
FATS			
Total Fat (g)	88.0 ± 59.2	72.5 ± 44.0	.64
Monounsaturated fat (g)	31.6 ± 22.4	24.5 ± 14.2	.60
Polyunsaturated fat (g)	22.3 ± 15.3	21.9 ± 16.1	.64
Saturated fat (g)	26.0 ± 20.9	20.7 ± 12.7	.76
Omega-3 (EPA/DHA) (g)	0.035 ± .029	0.144 ± .224	.89
CARBOHYDRATES (g)	237.5 ± 117.1	196.2 ± 89.0	.27
Added sugar (tsp. eq.)	9.6 ± 9.6	10.5 ± 11.4	.92
FIBER			
Total fiber (g)	22.4 ± 15.5	12.6 ± 5.1	.16
Total fruit (cup eq.)	.65 ± .93	.83 ± .61	.48
Total veggie (cup eq.)	2.4 ± 1.8	1.3 ± 1.0	.14
TOTAL PROTEIN (g)	99.2 ± 56.7	73.5 ± 33.0	.32
Red meat intake*	3.6 ± 0.7	3.9 ± 0.7	.56
PROCESSING			
Processed meats*	4.1 ± 0.9	3.9 ± 0.7	.45
Fast Foods*	3.9 ± 0.9	3.6 ± 0.5	.38

* Data from Fat and Fiber Behavior Questionnaire (FFBQ), scored 1-5, lower = higher consumption

CONCLUSIONS

- Based on the average HEI of 53, our IBD cohort is eating a diet that fails to meet key dietary guidelines, although not dissimilar to the average American diet (mean score 58).
- IBD patients generally consumed diets with a macronutrient breakdown similar to the average American.
- Majority of IBD patients (82%) report they change their diet with flare symptoms.
- In this preliminary investigation, between those with and without active disease we found:
  - No significant difference in the amount of fats, carbohydrates, fiber, and total protein consumed
  - No significant difference in the amount of fast food and processed food consumed

SPECULATIONS

- Despite most IBD patients indicating a change in their diet with flares, we speculate that patients make heterogenous changes that are not able to be detected between the groups as a whole.
- High quality evidence to guide recommendations for dietary changes during flares is needed.

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