

Diet of Inflammatory Bowel Disease Patients, in Gastrointestinal and Liver Center, Baghdad, 2020

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Abstract

Introduction: Inflammatory bowel disease (IBD) comprises a group of chronic immune disorders of unknown etiology characterized by intestinal inflammation which subsequently leads to debilitating symptoms which can adversely affect performance and quality of life. Crohn's disease (CD) and ulcerative colitis (UC) are the two most common phenotypes.

Patients and method: The cross-sectional study with the diagnosis of either Crohn's disease or ulcerative colitis. The data collection was carried out from 25 september to 10 november 2020. From gastrointestinal tract and liver center ,Baghdad . Convenient sample are willing to participate. By questionnaire.Body weight and hieght was measured. Body mass index (BMI) was calculated . Recorded intake of all food and drinks during last 24 hours. By Excil calculation program , the enegy intake of one day was calculated by mifflin-St.jeor method .The my pyramid plan for daily food and calories intake as recommended pattrenn . Statitcal analysis were performed using SPSS 23 . Data described as mean±standerd deviation (SD).Data were checked for normal distribution using t -test or chi square .The level of significance in the study was $p < 0.05$.

Result: All the participants (55;100%) were low milk group servings intake($P < 0.001$), also(74.5%) of participants were low fruit group servings intake ($P < 0.001$),(92.7%) Of participants was low vegetables group servings intake ($P < 0.001$) , but (87.3%)Of participants were high grain group servings intake ($P < 0.001$) ,(65.5%) of participants was low protein group servings ($P = 0.041$) , the fat group serving intake is low among (90.9%) of participants ($P < 0.001$) , 52.7% of participants low energy intake. The mean BMI for both genders was in the normal range (23.16 ± 5.33) as (49.1%) of participants , only 14.5 % was underweight , 29.1% was overweight and 7.3% was obese. The participants live in aurban area as (89.1%) . The occupation of them were 25% housewife,student (23.6%),employers (16.4%) and the rest with different occupations. The education of participants were primary school (36.4%) ,intermediate school(12.7%) , secondry school were (14.5%), graduated were (12.7%) and the rest in the different educations. Unbalnce diet shows among 76.4% of participants .

Conclusions and Recommendations : all participant modified their diet,half of the participants had low energy intake and some of the participants had underweight .Emphasized the importance for patients to be provided with nutrition – related knowledge as a part of strategies to avoid nutritional inadeqancies

Keyword: *inflmmatory bowel disease ,Crohn's disease ,Ucerative colitis ,diet.*

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Introduction

The term inflammatory bowel disease (IBD) comprises a group of chronic immune disorders

of unknown etiology characterized by intestinal inflammation which subsequently leads to debilitating symptoms which can adversely affect performance and quality of life. Crohn's disease (CD) and Ulcerative colitis (UC) are the two most common phenotypes. In these disease processes, the thermodynamic demands of inflammation as well as tissue losses from intestinal injury result in an increase in energy and nutrients requirements. As such, protein – calorie malnutrition and micronutrient deficiencies are common sequelae of this chronic persistent catabolic state. Nutritional therapy can be considered as supportive or primary treatment. The goal of supportive therapy is to correct any existing malnutrition and it essentially act as an adjunct to traditional therapy. They can occur at any age, but most often occur between 15 and 30 years of age. The Inflammation of UC is superficial in nature and is limited to the colon. It almost always affects the rectum and it extends proximally in a symmetrical, uninterrupted pattern to involve part or all of the large intestine. Typical presenting symptoms of UC include diarrhea, abdominal pain, and hematochezia. Crohn's disease is characterized by patchy transmural inflammation that may involve any part of the gastrointestinal tract from mouth to anus. The small intestine and the colon are the most commonly affected areas, while the rectum is usually spared. It is important to note that the small intestine is the site of absorption of most nutrients, therefore mucosal injury in this area usually results in significant weight loss and generalized malnutrition in addition to diarrhea and abdominal pain. The transmural inflammation can lead to fibrosis, resulting in obstructive clinical presentations, which are not typically seen in UC. CD can also be complicated by fistula formation. ⁽¹⁾

Etiology of IBD is unknown, but is thought to be multifactorial, involving genetic, immunologic, and environmental factors. Although genetic susceptibility, luminal antigenic drive, and environmental triggers are all important, the chronic relapsing, immune-mediated intestinal inflammation which is the hallmark of IBD is a direct result of the interaction of these essential Components. ⁽¹⁾

Diet, as a source of luminal antigens, is postulated to play an important role in the immune pathogenesis of IBD. It is unclear whether antibodies directed against dietary antigens actually trigger the inflammatory

response seen in IBD or whether these antibodies are merely a downstream product of intestinal inflammation ⁽¹⁾.

Many people with IBD can consume normal diet during times of disease remission but may need to alter their diet during flares. A well – balanced diet with adequate intake of protein, carbohydrates and fat as well as vitamins and minerals, is necessary for nutrition. this can be achieved by eating a variety of food from all the food groups. Meat, fish, poultry and dairy products are a source of protein. bread, cereal, starches, fruits and vegetables are sources of carbohydrates. butter, margarine and oil are sources of fat. ⁽²⁾

Protein-calorie malnutrition is common among patients with IBD and correlates with disease activity, which may be mediated by pro-inflammatory cytokines such as IL-1, IL-6 and tumor necrosis factor alpha. Nutrition assessment is essential because of the severe consequences of malnutrition. A malnourished patient with IBD may present with defects in GI function that further limit the absorption and utilization of nutrients. ⁽³⁾

Malnutrition occurs in patients suffering from IBD as a consequence of decreased dietary Intake, increased nutrient losses, and increased nutrient requirements. ⁽³⁾

The aims of this study are to determine:

1. nutritional status of participants.
2. diet modification.
3. Energy adequacy.

PATIENTS AND METHODS

The cross-sectional study included 55 patients (31 male and 24 female aged 14-67 years) with the diagnosis of either Crohn's disease or ulcerative colitis . The data collection was carried out from 25 september to 10 november 2020. The participants were attended to gastrointestinal tract and liver center ,baghdad . the sample size based on convenient sample are willing to participate. The study was approved by clinical nutrition committee and all persons gave their oral approval prior to thier inclusion in the study.participants answered a questionnaire about disease and diet .Body weight was measured on a calibrated scale and hieght

was measured with a calibrated stadiometer . Body mass index (BMI) was calculated from the height and weight . The interview recorded intake of all food and drinks during last 24 hours.the data was transferred into Excel calculation program , the energy intake of one day for each participant was calculated by Mifflin-St.Jeor method ⁽⁹⁾ . We use the my pyramid food group servings and calories as recommended food pattern ⁽¹⁰⁾ . Statistical analysis were performed using SPSS 23 . Data described

as mean±standard deviation (SD) . Data were checked for normal distribution using t -test or chi square . The level of significance in the study was $p < 0.05$.

Result

A total of 55 patients (female 24(43.6%) and male 31(56.4%) with the diagnosis of either Crohn’s disease 32 (58.2%) or ulcerative colitis 23(41.8%) were attended to center and participated in study as shown in table -1-

Table -1- shows number and percent of gender and diagnosis

Diagnosis	Gender		Total
	Female	Male	
Cronh’s	11	21	32(58.2%)
Ulcerative	13	10	23(41.8%)
Total	24(43.6%)	31(56.4%)	55

All the participants (100%) were low milk group servings intake than recommended and statistically significant, also (74.5%) of participants were low fruit group servings intake than recommended and statistically significant ,(92.7%) Of participants was low vegetables group servings intake than recommended and statistically significant , but (87.3%)Of participants were high grain group servings intake than recommended and statistically significant ,(65.5%) of participants was low protein group servings intake than recommended and statistically significant, the fat group serving intake is low among (90.9%) of participants and statistically significant, 52.7% of participants low energy intake ,as shown in table -2-

Table-2 -show s number and percent of food groups servings intakes and energy from participants compared with recommended

intake	Milk	Fruits	Vegetables	Grins	Protien	Fat	Energy
Equal	0	4(7.3%)	1(1.8%)	1(1.8%)	7(12.7)	0	0
Low	55(100%)	41(74.5%)	51(92.7%)	6(10.9%)	36(65.5%)	50(90.9%)	29(52.7%)
More	0	10(18.2%)	3(5.5%)	48(87.3%)	12(21.8%)	5(9.1)	26(47.3%)
Total	55	55	55	55	55	55	55
P value	<0.001	<0.001	<0.001	<0.001	<0.041	<0.001	-

The mean age of participants was 31.45±12.37, the mean energy intake was 1852.4 ±744.4 calories . The mean BMI for both genders was in the normal range (23.16 ± 5.33) as (49.1%) of participants , only 14.5 % was underweight , 29.1% was overweight and 7.3% was obese as shown in table-3-

Table-3-shows number and percents of participants BMI.

diagnosis	BMI				total
	Normal	over weight	Obese	Under weight	
Cronh's	17	9	1	5	32
Ulcerative	10	7	3	3	23
Total	27(49.1%)	16(29.1%)	4(7.3%)	8(14.5%)	55

The participants live in urban area as (89.1%). The occupation of them were 25% housewife, student (23.6%), employers (16.4%) and the rest with different occupations. The education of participants were primary school (36.4%), intermediate school (12.7%), graduated were (12.7%) and secondary school were (14.5%), the rest in the different educations with statistically significant ($p=0.034$). Unbalanced diet shows among 76.4% of participants.

Discussion

Inflammatory bowel disease (IBD) is a chronic relapsing – remitting immune disorder of unknown etiology, nutritional therapy considered as supportive or primary treatment⁽¹⁾.

The result of current study showed that all participants low intake of dairy group servings, similar to Vidarsdottir et al 2016⁽⁸⁾ as half of participants restricted their intake of dairy products, also similar to Brasil-Lopes et al⁽¹¹⁾. Thus dietary calcium intake will be inadequate regarding intake of fruits, vegetables, protein groups and dairy products servings were low than recommended and these findings in agreement with Kampl et al study 2020⁽⁴⁾ who found that participants most often modified fruits and vegetables and dairy as a result of their IBD. Also in agreement with Shafiee et al study 2019⁽⁵⁾ who found that IBD patients do not meet the standard nutrients recommendation for protein. Current study showed that high grains group servings intake than recommended, and these findings in disagreement with Kampl et al study 2020⁽⁴⁾ who found that low intake of whole grains.

Half of participants in the present study had BMI in the normal range and fourteen percents were underweight due to food – restricted behavior and decreased appetite during flare and the rest overweight and obese. And these in agreement with Holt et al study 2016⁽⁶⁾ that

found normal range of BMI. The finding of our study in disagreement with Vidarsdottir et al study 2016⁽⁸⁾ who shows mostly overweight range among IBD patients.

The participants claimed that diet can affect symptoms and change their diet accordingly after they were diagnosed with IBD and due to lack of knowledge and awareness among participants, who are less certain about the role of diet on different disease severity, whether restriction or addition of specific food items might contribute to increase nutritional deficiency, this is in agreement with Kamp et al study 2020⁽⁴⁾ who showed that the majority of the participants reported modifying their dietary intake as a result of IBD and expressed belief that diet could reduce symptoms. The result of our study also in agreement with Bergeron et al study 2017⁽⁷⁾ who showed that food avoidance is common among patients with inflammatory bowel diseases.

Limitations

- 1- Decrease number of patients attended center because of Covid 19 pandemic,
- 2- also lack of biological treatment of patients from store lead to don't attend to center.

Conclusion

- 1- all participants modified their diet
- 2- half of the participants had low energy intake.

- 3- some of the participants had underweight .

Recommendations

1- Emphasized the importance for patient to be provided with nutrition – related knowledge as a part of strategies to avoid nutritional inadequacies

- 2- Further studies need about this topics.

Ethical Clearance: The Research Ethical Committee at scientific research by ethical approval of both MOH and MOHSER in Iraq

Conflict of Interest: None

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