DIETARY HABITS OF PATIENTS WITH INFLAMMATORY BOWEL DISEASE – A SHORT REPORT

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The aim of the study was to assess the dietary habits of patients with inflammatory bowel disease using the dietary recall concerning nutritional habits and preferences. Many common dietary mistakes were observed in the studied group: over 45% of the patients ate ≤ 3 meals per day (often skipping breakfast) and over 30% of the patient did not eat vegetables nor fruits regularly. About 80% of the group consumed irregularly whole-meal cereal products, fish, avoided milk and milk beverages, used butter as a spread fat. Furthermore, they consumed fried products at least semiweekly. More than 75% of the patients declared moderate or abundant sugar usage in their diets. These dietary habits may lead to the exacerbation of disease symptoms or nutritional deficiencies.

INTRODUCTION

Crohn's disease and ulcerative colitis, also referred to as chronic inflammatory bowel diseases (IBD), affect up to 500 per 100,000 persons in the Western world. Recent studies in the etiology of IBD suggest that these diseases are induced by a combination of genetic, environmental, and immunological factors [Travis *et al*., 2001; Danese *et al*., 2004]. One of important environmental factors is nutrition. Many of the recent studies indicate that the nutritional risk factors may cause or intensify IBD symptoms. The nutritional risk factors include a high intake of sugar and sweets, technologically converted fats, products with high sulphur contamination as well as diet poor in fiber, vitamin C and n-3 fatty acids [Tragnone *et al*., 1995; Reif *et al*., 1997; Geerling *et al.*, 2000]. Nutrition plays a pivotal role in the clinical care of patients with inflammatory bowel disease. In addition to specific dietary guidance in IBD, the nutritional support aims at correcting malnutrition and macronutrient deficiencies and at reversing their metabolic/pathological consequences. This should be considered in all patients with inflammatory bowel disease, as well as in remission and in the acute flare phase. In patients with acute flares of Crohn's disease the nutritional support has a primary role in inducing remission, however the mechanism is uncertain as yet.

The aim of the study was to assess the dietary habits of patients with inflammatory bowel disease during remission in the population of Lower Silesia, using the dietary history.

SUBJECTS AND METHODS

The studied group consisted of 128 IBD patients (63 females and 65 males): 45 individuals with Crohn's disease (CD) and 82 with ulcerative colitis (UC), hospitalized at the Department of Gastroenterology and Hepatology, Wroclaw Medical University. The mean age and BMI in CD females group was 37 years and 20.5 kg/m^2, in CD males group – 38 years and 20.8 kg/m^2, in UC females group – 45 years and 23.8 kg/m^2, and in UC males group – 46 years and 25.2 kg/m^2 respectively. The dietary habits were investigated by dietary history taken by trained inquirers. The dietary history was developed and validated at the Department of Food Science and Nutrition, Wroclaw Medical University [Ilow *et al*., 2005], based on the Polish food-based dietary guidelines [Złota Karta Prawidłowego Żywienia, 1997]. Evaluation of dietary habits from the recalls was performed using the FoxPro software v. 2.6/Win by Microsoft. Statistical analysis was performed using Excel 2000 software. Both in the CD and UC patients group dietary recall data of the studied females and males were combined in one group for statistical analysis.

RESULTS AND DISCUSSION

Over 47% of CD patients and 46% UC patients ate ≤3 meals per day, often skipping breakfast. In the other investigated groups the patients ate 4 and more meals per day. According to the dietary guidance for IBD patients, meals should be eaten more frequently, 5-6 times per day, but in smaller portions [Goh & O'Morain, 2003]. It assures better digestion and absorption of nutrients.

Near 80% of the patients ate irregularly whole grain cereal products and durum pasta (Table 1). They showed preference for white bread, pasta, potato and white rice in their diet. The consumption of the products rich in insoluble fiber may cause abdominal pain, flatulence or diarrhea intensity

TABLE 1. Percentage of patients with IBD habitually consuming whole-grain cereal products, durum pasta and brown rice.

ll	CD patients (n=46)	UC patients (n=82)
in 1 meal	8.7	13.4
in 2 meals	4.3	1.2
in 3 meals	4.3	3.7
Irregular eating	82.7	81.7

TABLE 3. Percentage of patients with IBD habitually consuming liquid milk products and cheese.

Portion number per day	CD patients (n=46)		UC patients (n=82)	
	Liquid milk products	Cheese	Liquid milk products	Cheese
1 portion	15.2	13.0	12.2	14.6
2 portions	8.7	4.3	14.6	13.4
3 portions	2.2	2.2	6.1	3.7
4 portions	0	4.3	2.4	6.1
More than 4 portions	2.2	4.3	1.2	3.7
Irregular eating or not eating	71.7	71.9	63.5	58.5

One portion consists of 0.5 glass of liquid milk products or 1 slice of cheese.

[Meier & Gassull, 2004]. It could be an effect of mechanical bowel irritation or increase of intestinal fermentation, hence IBD patients should avoid whole grain cereal products despite the Food Pyramid recommendation.

Over 50% of the investigated individuals did not drink vegetable or fruit juices or drank them irregularly. We observed irregular consumption or intake of only one portion per day of vegetables in 41.3% CD and 50% UC patients and of fruits in 65.2% CD and 65.9% UC individuals, respectively (Table 2). This could be an effect of the patient fear against abdominal pain and diarrhea or their preference of the Western life style with the diet poor in vegetables and fruits. Numerous researchers emphasize that as acute phase symptoms abate, a patient should enrich his diet in boiled vegetables and fruits as juices or pures without small stones [O'Sullivan & O'Morain, 2004]. The IBD patients in remission are recommended to follow a balanced diet likewise healthy people, with 3-5 portions of vegetables per day and 2-3 portions of fruits per day, respectively. Sakamoto *et al.* [2005] reported that the low consumption of vegetables and fruits was associated with an increased risk of IBD.

The majority of patients (86.9% CD and 75.6% UC individuals) did not consume or consumed one glass of milk or fermented milk products or a portion of cheese per day (Table 3). "Golden Card of Accurate Nutrition" recommends a daily intake of 2 milk glasses for calcium requirement cover [Złota Karta Prawidłowego Żywienia, 1997]. Some of the patients admitted having diarrhea incidence followed by milk consumption, but most of individuals avoided milk products without any reason despite having no lactose intolerance or milk protein allergy. The IBD patients are recommended to enrich their diet in fermented milk products, like yoghurt or kefir, especially the probiotic ones [O'Sullivan & O'Morain, 2004; Parkers, 2006], as these products regulate the functioning of the digestive tract and help reinforce the immune system. Diary prod-

ucts are a good source of calcium and may prevent osteopenia and osteporosis in IBD patients [Bernstein, 2002].

Half the inquired patients used butter as a table spread (>55%). Butter is a source of saturated fatty acids and cholesterol which constitute risk factors for IBD [Reif *et al.*, 1997]. Nearly 50% of the patients, from both of the investigated groups, consumed fried products at least once a week. The IBD patients should avoid fried products and choose boiled, roasted in foil or braised ones [Goh & O'Morain, 2003]. Frying causes unsaturated fatty acid transformation to *trans-* and oxidated fatty acids which irritate the intestinal mucous membrane.

Analyses showed that 85% of the patients with CD and 77% with UC added sugar to their drinks. Several studies showed that sugar and sweets intake was increased in IBD patients as compared to controls and it was a potential dietary risk factor [Reif, 1997; Tragnone *et al.*, 1995].

The majority of the dietary mistakes observed in the investigated groups, such as: intake of less than 3 daily meals, low intake of brown bread, overdose of butter and irregular consumption of vegetables, fruits and milk, was shown in 50-year old inhabitants of Wroclaw, too [Ilow *et al.*, 2007].

CONCLUSIONS

Most of the studied IBD patients had an imbalanced diet characterised by insufficient supply of: vegetables, fruits and milk products, and overdose of saturated fatty acids derived from butter, and easily absorbed carbohydrates. The majority of patients did not apply the "Golden Card of Accurate Nutrition" and the IBD dietary recommendations. Our preliminary results support the need of dietary counseling and an education of IBD patients also during the symptom–free interval.

TABLE 2. Percentage of patients with IBD habitually consuming vegetables and fruits.

Portion number per day	CD patients (n=46)		UC patients (n=82)	
	vegetables	fruits	vegetables	fruits
1 portion	32.6	34.8	40.2	29.3
2 portions	32.6	19.6	35.3	12.2
3 portions	19.6	10.8	9.8	14.6
More than 4 portions	6.5	4.4	4.9	7.3
Irregular eating	8.7	30.4	9.8	36.6

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