Effects of diet management for irritable bowel syndrome

Introduction

In patients with irritable bowel syndrome, how does diet management compared to no diet management affect symptoms related to the disease? Irritable bowel syndrome (IBS) is a very common chronic gastrointestinal disorder that is believed to affect over 10% of the population. The disease is characterized by a number of symptoms including, but not limited to abdominal pain, cramping, constipation, diarrhea, bloating, and/or gassiness. The article " Addressing the Role of Food in Irritable Bowel Syndrome Symptom Management" describes how a diagnosis for IBS occurs. As stated in the article,

According to the Rome III diagnostic criteria for IBS, a diagnosis of IBS is made if a patient experiences recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months with symptom onset at least 6 months before diagnosis with 2 or more of the following: improvement with defecation, change in frequency of stool, and/or change in form or appearance of the stool. (Capili, Anastasi, & Chang, 2016, p. 324)

The pathophysiology of IBS, however, is not fully understood, as no bodily malformation can be directly linked to the disorder. Changes in gastrointestinal motility and visceral hypersensitivity have been the most common focuses in studies of IBS (Wald, 2019). However, data from each study has been conflicting and overall inconclusive. " Because of the uncertain aetiology and pathophysiology, only a few effective, non-specific treatment options exist, improving only some key symptoms but not leading to the healing of IBS..." (Varjú et al., 2017). Treatment usually connects

dietary, pharmacological, and psychological methods in order to reduce symptoms (Varjú et al., 2017).

The aim of this paper is to take an in-depth look at the effects of different diets on the symptoms of irritable bowel syndrome and how diet management can be integrated into a patient's life. As a nurse, being able to identify symptoms and potential red flags is critical in the management of the disease. Along with this, nurses play a huge role in education of the condition. A nurse can teach the client ways in which he or she can reduce their symptoms, promote patient and family coping, and administer medications to help alleviate symptoms. In reading this paper, nurses will fully understand the optimal diet for a patient with IBS. The nurse will be able to educate his or her patients on foods that have the potential to bring on or worsen their symptoms, as well as, foods that can be safely eaten without the worry of potential abdominal upset. The nurse will also be able to educate on proper portion sizes and how to maintain a healthy weight.

Background – Review of Literature

Patients with IBS know their triggers and how to avoid them. Commonly reported triggers include fruits and vegetables, grains, dairy products, legumes, wine, coffee, tea, and fried foods (Capili, Anastasi, & Chang, 2016, p. 325). However, the question is, why do certain foods provoke such a harsh gastrointestinal response? Three main factors seem to explain the relationship between diet and IBS: obesity, food allergy or intolerance, and poorly absorbed carbohydrates and fiber (Salhy & Gunderson, 2015).

Numerous studies have shown that the severity of symptoms in irritable bowel syndrome and an increased body mass index go hand-in-hand (Capili, Anastasi, & Chang, 2016, p. 326). There are five types of gastrointestinal endocrine cells that help regulate appetite: ghrelin, cholecystokinin (CKK), peptide YY (PYY), enteroglucagon (oxyntomodulin), and serotonin (Salhy & Gundersen, 2015). In IBS patients, the amount of each of these cells in the intestinal tract is abnormal. Ghrelin is referred to as the hormone of hunger because it is responsible for provoking an increase in appetite and therefore, food consumption. In patients presenting with irritable bowel syndrome with diarrhea (IBS-D), the cell density of ghrelin is escalated (Salhy & Gundersen, 2015). Consequently, it can be inferred that due to an increase in ghrelin, there is increased food consumption and BMI in these patients. The other four hormones previously stated produce anorexigenic effects – meaning that they cause a decrease in appetite. In IBS patients of both subtypes, the amount of these hormones is decreased (Salhy & Gundersen, 2015). With this is mind, it can be concluded that these patients would, again, experience an increased appetite and in turn, increased food consumption and BMI.

In 2012, a study was performed to compare gastrointestinal symptoms in individuals at a healthy weight and those who were morbidly obese (Huseini et al., 2014). Survey participants were instructed to complete a survey describing their current GI symptoms. “ The participants rated the frequency of symptoms as absent (never, rarely) or present (occasionally, frequently)” (Huseini et al., 2014). The symptoms were then grouped into upper or lower gastrointestinal categories and compared. From the questionnaire, it was concluded that the obese patients were more likely to experience both

stomach pain and a change in bowel habits compared to those within normal weight limits. Forty percent of the obese patients experienced abdominal discomfort, while only twenty-five percent of healthy weight patients did; meanwhile eighty-two percent of obese patients compared to 61% of healthy patients experienced an alteration in bowel tendencies (Huseini et al., 2014).

From both of these studies, it can be concluded that IBS and its symptoms are related to diet and obesity. First, the patient experiences an altered number of gastrointestinal hormones. From here, the patient has an increased appetite, which leads to indulging in foods of their choice and an increased weight and BMI. With this increased BMI, the prevalence of GI symptoms drastically increases.

Another common factor relating diet and symptom onset in IBS patients is a food allergy or sensitivity. The most common sensitivities that IBS patients encounter are fruits and vegetables, alcoholic beverages, caffeine, and fatty foods. In 2012, there was a study done to assess differences between the diets of those with IBS and those without. Subjects of the study were asked to complete a questionnaire that derived answers about their food and beverage intake. As stated in the article “ Diet in subjects with irritable bowel syndrome: A cross-sectional study in the general population”,

The diet was assessed using a limited food frequency questionnaire (FFQ), and questions included the frequency and quantity of the intake of beverages (milk, water, carbonated beverages, and alcoholic beverages), fruits, vegetables, fatty fish, cheese, and omega-3 fatty acid supplements,

but did not include the food groups cereals and meat. (Ligaarden, Lydersen, & Farup, 2012).

The results of the questionnaire showed that the more vegetables a patient consumed, the worse their symptoms in both IBS-C and IBS with alternating diarrhea and constipation (IBS-A). In IBS-D, however, the presentation of symptoms was greater as fruit intake increased. These results occurred because vegetables and fruits are fermenting foods that reportedly produce more gas in the intestinal tract and patients with IBS handle an increase in gas poorly (Ligaarden, Lydersen, & Farup, 2012).

Along with a sensitivity to fruits and vegetables, patients with IBS, specifically IBS-D, also tend to have sensitivities to alcoholic beverages and caffeine. As described by Capili, Anastasi, and Chang (2016), “ the direct contact of alcoholic beverages with the mucosa lining of the GI tract can lead to mucosal damage, disrupting the assimilation of nutrients and intestinal motility” (p. 325). In one study, a strong positive correlation between alcohol intake and symptom intensity was shown in patients with IBS-D (Ligaarden, Lydersen, & Farup, 2012). This is due alcohol’s high sugar content that in turn, produces an osmotic diarrheal effect (Ligaarden, Lyndersen, & Farup, 2012). Caffeine also produces a diarrheal effect on those with IBS-D due to the increase it causes in gastric motility. A study was done with 330 IBS patients and results showed that coffee was one of the main causes of gastrointestinal symptoms, such as, pain and loose stools (Capili, Anastasi, & Chang, 2016).

The last main food sensitivity recognized by patient's with IBS are fatty foods. Typically, patients report that foods with a high lipid content cause increased gas and loose stools. Along with this subjective finding, " laboratory studies have shown intestinal gas transport is delayed by intraluminal lipids, and duodenal lipids inhibit bowel motility" (Capili, Anastasi, & Chang, 2016). If gas transport is delayed, the patient will experience a build-up of gas that leads to abdominal bloating and pain. Furthermore, if bowel motility is inhibited, the patient will experience similar symptoms – bloating and pain. Once the intestinal tract is backed up, abdominal muscle contractions will occur in order to help push the gas and feces out, resulting in a diarrheal effect.

The last dietary factor associated with IBS symptoms is a high

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