Katie Gallagher

Diet Instruction

Professor Matuszak

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KNH 413: Diet Instruction – Gluten Free Diet

**Description of Patient and Diagnosis**:

Kayla is a 17-year-old female soccer player for her high school varsity team. She is 5’3” with a current weight of 118 lbs. She has recently presented signs of muscle and joint pain, chronic diarrhea, unexplained weight loss and unusual fatigue. Her physician noted that she displayed signs of malnutrition. She was referred by her physician to an allergist to discover that she tested for positive for gluten antigens. The patient was then diagnosed with celiac disease. She was then referred to the dietitian to help her eliminate gluten while meeting the demands of her active lifestyle. (NCBI, 2014).

**Etiology:**

Celiac disease can be a highly complex disease. Onset of celiac can be due to genetic, environmental, or autoimmune factors. It occurs when the intestinal mucosa is damaged when the small intestine is exposed to the prolamin fraction. Prolamin fraction is the protein components of gluten. Gluten is found in wheat, barley, rye, malt barley, and a small amount in oats. Patients with celiac disease typically have the genes for the disease. (Nelms, 2011, pg.402). Other theories that are thought to increase risk include the age gluten is introduced, the length of breastfeeding, and the presence of viral infections during infancy. (Marcason, 2014). Symptoms of celiac disease include fatigue, joint pain, depression, seizures, skin rash, chronic diarrhea, and protein-energy malnutrition. These symptoms are consistent with many other gastrointestinal disturbances and thus often misdiagnosed. (Nelms, 2011, pg. 402).

In other words, celiac disease is an allergy or sensitivity to gluten. When gluten is digested, the body sends an inflammatory response. This inflammatory response basically means that your body does not like this invader and wants to kick them out. (Nelms, 2011, pg. 402).

**Diagnostic Measures:**

Celiac disease can be diagnosed with various methods. The gold standard method is a biopsy of the small intestine mucosa to determine villous atrophy, crypt hyperplasia, lymphocytic and plasma cell infiltrate in the lamin propria. These symptoms will subside once gluten has been restricted in patients positive for celiac disease. The other, simpler, method is identifying antibodies to gluten including anti-tissue transglutaminase, endomysial IgA, and anti-gliadin. (Nelms, 2011, pg. 402).

Kayla’s antibody test showed that she was positive for anti-tTG, EMA, and AGA indicating that she does have celiac disease.

**Treatment:**

 Medical, surgical and/or psychological –

The only current treatment for celiac disease is nutrition therapy and eliminating gluten from the diet. If symptoms do not subside, parenteral nutrition may be considered. (Nelms, 2011, pg. 403).

A gluten-free diet is the most generally accepted method of treating celiac disease. Thorough nutrition education is required to ensure understanding of the complex diet.

Medical Nutrition Therapy –

Nutrition therapy consists of prescribing a lactose-free, gluten-free diet. Lactase is often deficient due to the damaged villi and therefore should be avoided. Once the villi begin to heal, lactose may be reintroduced. Unlike lactose, celiac patients must follow a gluten free diet for the rest of their lives. They must avoid all foods that contain wheat, rye, barley, and malt. Oats may be consumed as tolerated; up to 50 grams of oats are generally recognized as safe. Patients must also be aware that many over the counter medications and prescription medications may have fillers that contain gluten. (Nelms, 2011, pg. 403).

Kayla will begin on a gluten-free diet that will slowly progress to reintroduce lactose and small amounts of oats as tolerated. She should incorporate grains such as corn, quinoa, rice, and millet in order to replace grains that have gluten. Other plant foods to include would be buckwheat, flax, soy, lentils, potatoes, and wild rice. (Academy of Nutrition and Dietetics, 2014).

Gluten-free living while being a competitive athlete can be a struggle. Gluten-free athletes must find different sources of complex carbohydrates in order to meet the required energy needs. Some sources could be beans, rice, corn meal, corn flour, nuts, potatoes, sweet potatoes, tapioca, fruits, and other vegetables. Other micronutrients such as iron, B vitamins, vitamin D, calcium, and fiber should be noted as a concern. Patients should look for gluten-free, enriched products as well as natural sources of these nutrients to ensure adequate intake. Gluten-free multivitamin supplements may be recommended.

Prognosis –

Upon adherence to a gluten-free diet, Kayla’s symptoms should subside. She should no longer experience diarrhea, muscle, or joint pain. She should begin to a gain an appropriate amount of weight to meet her ideal body weight and will be able to compete in tennis as normal. Her body should return to good health if she complies with the gluten-free diet. Recovery may take up to 2-3 years in adults, but only 3-6 months in children. (NCBI, 2014). Athletes have been shown to have the ability to compete at the highest performance level despite the diet restrictions associated with celiac disease.

References

Academy of Nutrition and Dietetics. (2014). *If You Have celiac disease: Grains and Plant Foods to Include on Your Grocery List*. Retrieved from <http://www.eatright.org/resource/health/diseases-and-conditions/celiac-disease/if-you-have-celiac-disease-grains-and-plant-foods-to-include-on-your-grocery-list>

Academy of Nutrition and Dietetics. (2015). *Nutrition Care Manual: celiac disease*. Retrieved from <https://www.nutritioncaremanual.org/client_ed.cfm?ncm_client_ed_id=164&actionxm=Download>

Leone, J. E., Gray, K. A., Massie, J. E., & Rossi, J. M. (2005). celiac disease Symptoms in a Female Collegiate Tennis Player: A Case Report. Journal of Athletic Training, 40(4), 365–369.

Marcason, Wendy. (2014). *Understanding celiac disease*. Academy of Nutrition and Dietetics. Retrieved from <http://www.eatright.org/resource/health/diseases-and-conditions/celiac-disease/understanding-celiac-disease>

National Center for Biotechnology Information. (2014). *celiac disease*. Retrieved February 9, 2015, from <http://www.ncbi.nlm.nih.gov/pubmed/23410566>

Nelms, M. (2011). *Nutrition Therapy and Pathophysiology* (2nd ed.). Belmont, CA: Wadsworth, Cengage Learning.