Abstract

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Subject of study: Healthcare bioanalytics

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Title: The role of microbiome in celiac disease

Background: Descriptions of the celiac disease problematics. Focus on the origin of the disease and its possible connection and role of the intestinal microbiome. Define the term microbiome and point out its possible role in human health. Finally, address the attention to possibilities in the treatment of celiac disease.

Main findings: The role of the microbiome in celiac disease and other diseases is a frequently discussed topic. Patients with the celiac disease diagnosis depend on a lifelong gluten-free diet. The microbiome is highly specific to and is affected by many external stimuli, which can often be affected. Current studies point to a linkage between the microbiome and many diseases, including celiac disease.

Conslusions: More knowledge is needed **for the complex insight into the problematics of the relationship between celiac disease and the microbiome.** In general, the microbiome composition has a much more significant impact on human lives than previously thought. Intestinal microbiome imbalance is related to celiac disease and a whole range of other diseases, such as obesity, metabolic, inflammatory, cancer, mental, allergic, and cardiovascular diseases. From an optimistic point of view, it can be stated that some people who have celiac disease have a chance at a normal life, regardless of a gluten-free diet, thanks to scientific knowledge, which is constantly rising. This applies particularly to fecal microbiota transplantation, the reduction of immunogenic epitopes in gluten, and the treatment of celiac disease based on active immunization.

Key words: Celiac disease, microbiome, autoimmune disease, intestinal barrier damage, intestinal permeability, factors affecting microbiome, celiac disease therapy