

CAN CELIAC DISEASES BE A CAUSE OF DEPRESSION

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ABSTRACT

Aim: The aim of this study is to do a review on celiac diseases and the interlink between celiac diseases and depression.

Introduction: Celiac disease is an autoimmune disease which is triggered due to the exposure of dietary gluten in genetically susceptible individuals. Often, celiac disease can be associated with depression and many other health disorders. Previous studies have shown that a lifetime depressive symptoms can occur in one third of the celiac patients. Celiac disease can develop at any age. Since celiac disease is an autoimmune disorder, it is associated with other autoimmune disorders. If left untreated, celiac disease can lead to additional serious health problems. Celiac diseases can be treated by natural methods like consuming gluten free food, healing of intestines with aloe vera , paprika, dietary supplements, nutrients etc. The main therapeutic intervention of celiac disease is a gluten-free diet but however now the dietary agents are under active investigation.

Methods : The present study has collected various articles related to the current topic from various internet sources such as PubMed, Google Scholar, PMC, etc..The articles were reviewed between the period 2000 to 2020.

Conclusion: Thus healthcare professionals need to be aware of these ongoing psychological burdens of celiac disease and support patience and recommend a gluten-free diet. This study emphasises whether celiac disease is associated with depression.

Keywords: celiac diseases, genetic disorder, diagnostic test, depression.

INTRODUCTION

Celiac disease is an immune mediated disease which is dependent on gluten (protein which is present in wheat, rye and barley). This disease occurs in about 1% of the population. Symptoms of celiac disease can be varying like postprandial bloating, steatorrhoea reduce the absorption of fat by the intestine, weight loss et cetera [1]. This disease is confirmed when one is diagnosed with a number of different antibodies like anti endomysial antibodies (EMA), anti-tissue transglutaminase antibodies(tTG) and anti gliadin antibodies(AGA) [2].

Previous studies have shown that a lifetime depressive symptoms can occur in one third of the coeliac patients. Consumption of a gluten-free diet can reduce the risk of depressive symptoms [3]. Most of the coeliac disease patients experience common psychiatric symptoms like apathy, anxiety, depression, irritability et cetera [4]. Several mechanisms are involved like dietary non-compliance, sustained malabsorption play a major role which can lead to sustain nutritional deficiencies and have an increased risk of depression. Around one third of the celiac disease patients experience the depressive symptoms [5]

There are about 200 known clinical signs and symptoms associated with celiac disease. But oral manifestations such as dental enamel hypoplasia, aphthous ulcers and delayed eruption of teeth are also the associated symptoms of celiac diseases. Thus healthcare professionals need to be aware of these ongoing psychological burdens of celiac disease and support patience and recommend a gluten-free diet.

MATERIALS AND METHODS

This is a scoping review based study on the topic celiac diseases. Many articles related to celiac disease were referred for this study. All the information and data were collected from the internet, Google scholar, PubMed et cetera [6-11]. Nearly 20 articles were selected and reviewed. The inclusion criteria had articles after the year 2000 and exclusion criteria had articles before 2000. The articles were reviewed between the period 2000 to 2020. The statistical software used by the review article is SPSS. The linkage between coeliac disease and depression were considered as dependent variables and linkage between depression and other diseases is considered as independent variable.

CELIAC DISEASE:

Celiac disease is an autoimmune condition which is triggered when gluten ingestion takes place in genetically predisposed individuals. Gluten or alcohol soluble proteins which are present in various cereals including wheat, rye, barley, spelt and kamut [12]. Celiac diseases can have many associated problems and may also bring serious affect during pregnancies if left untreated . But celiac diseases can be treated by natural methods like consuming gluten free food, healing of intestines with aloe vera , paprika, dietary supplements, nutrients etc...

MAIN CONDITIONS ASSOCIATED WITH CELIAC DISEASES:

There are a set of conditions which are associated with celiac diseases. They include genetic disorders like down syndrome, Turner syndrome, Williams syndrome [13]. Type one diabetes has a 5 to 10 fold risk increase in children [14]. Autoimmune thyroid disorder has an increased prevalence of nearly 2% to 5% [15]. Other conditions like autoimmune hepatitis and other forms of liver involvement also occur [16]. Celiac disease is associated with neurological disorders also [17].

DIAGNOSTIC TEST FOR CELIAC DISEASES:

The diagnostic test for celiac diseases Include serological test. Here many types of antibodies are involved. The best strategy used is the anti-tissue transglutaminase antibodies. Antigliadin antibodies testing is no longer recommended. Another type involved in serological testing is the deamidated gliadin peptides. In vitro gluten challenge test is another diagnostic test for celiac diseases [17] . Clinical manifestations involve multiple organ systems where many patients can be asymptomatic or only minimally symptomatic. Broadly speaking, they can be categorized as intestinal or extraintestinal. Most cases of celiac disease are diagnosed in persons with extraintestinal manifestations. The clinical presentations which can be strongly associated with celiac disease include chronic gastrointestinal symptoms with a family history of celiac disease or a personal history of autoimmune disease or immunoglobulin A (IgA) deficiency, biopsy-proven dermatitis herpetiformis, chronic diarrhea, failure to thrive in children, and iron deficiency anemia refractory to oral supplementation [18].

SECONDARY COMPLICATIONS

Depression:

Depression is a feeling of sadness and loss of interest. It is not a syndrome. Depression can last for several weeks, months or even years. A person with depression can experience the following feelings like fatigue, worthlessness, guilt, difficulty in thinking and concentrating and making decisions. Recurrent thoughts of suicide is also observed in few individuals [19]. It is a very complex disease where no one knows the exact cause for it. There can be various reasons for depression like serious medical illness, unacceptable big change or move in life. Depression can also occur without any underlying causes. Depression can be a manifestation of untreated or undiagnosed celiac disease. In several studies, it showed that females with celiac disease had more depressive symptoms than males. But the exact cause of depressive symptoms in celiac disease is unknown.[20].

Neurological complications:

One of the conditions is called gluten ataxia which is due to gluten sensitivity. This causes changes in the cerebellum. Symptoms are upper or lower limb ataxia, gait ataxia and dysarthria[21] Epilepsy and seizure disorder is also associated with gluten where it has a prevalence of 0.8% to 6%. Symptoms include occipital calcification and seizures [22]. Other neurological complications include peripheral neuropathy, inflammatory myopathy, myelopathies, headache and gluten encephalopathy [23].

Psychiatric complications:

Anxiety disorders can be associated with gluten intolerance. Gluten sensitivity can cause depression, anxiety and mood disorders [24]. Deficit hyperactivity disorder (ADHD), autism spectrum disorders and schizophrenia are associated with celiac diseases [25]. Individuals with schizophrenia have an increased prevalence of autoimmune disease. Increased immune sensitivity to gluten has been reported in schizophrenia. Anorexia nervosa is an eating disorder which is associated with celiac diseases. Its prevalence is 0.6%. The relationship between CD and eating disorders is not very clear but the presence of CD symptoms may confuse the clinical manifestation of both disorders and can bring confusion in the diagnosis and treatment [20].

DISCUSSION

Celiac disease is an immune reaction to eating gluten which creates inflammation that damages the small intestine's lining leading to medical complications. It also causes malabsorption of some nutrients. The main therapeutic intervention of celiac disease is a gluten-free diet but however now the dietary agents are under active investigation [26].

Since celiac disease is an autoimmune disorder it can have interconnection with other autoimmune disorders like Sjögren's syndrome. Several studies have shown significant associations between Sjögren's syndrome and celiac disease. A person with Celiac disease has a prevalence rate of Sjögren's syndrome in the range of 4.5% of 15% [27]. Psoriasis Is another chronic inflammatory disorder where studies have found to have a significantly higher rate of celiac disease of up to 4.34% [28]. Another study has said that celiac disease patients have an increased risk of acute and chronic pancreatitis [29]. Thus celiac disease is associated with many disorders and individuals having a family history of autoimmunity are risk factors for developing autoimmune disorders [30].

The present research interest was developed from previous studies where the investigators involved in studies which were done based on clinical reports, interventional studies [31] [32] [33] [34] [35], in vitro studies [36] [37] [38] [39] and systematic review. According to a review study, there are no limitations. Thus consuming gluten-free food can prevent celiac disease and other related problems.

CONCLUSION

Converging and accumulating evidence suggest that gluten mediated immune response is frequently associated with neurological and psychiatric manifestation. Thus consuming gluten-free food can reduce the risk of this autoimmune disease and other related problems of celiac diseases.

ACKNOWLEDGEMENT

This research was done under the supervision of the Department of research of Saveetha dental College and Hospitals. We sincerely show gratitude to the corresponding guides who provided insight and expertise that greatly assisted the research.

AUTHOR CONTRIBUTION

Author - 1 (Preethi. G) Carried out the study by collecting data from search engines and drafted the manuscript by necessary information. **Author - 2 (Dr. Keerthi Sasanka)** Aided in conception of the topic, has participated in the review and has supervised in preparation of the manuscript. **Author - 3 (Dr. Dinesh Premavathy)** Has participated in the study design and has coordinated in developing the manuscript. All authors have discussed the study details among themselves and contributed to the final manuscript. **Author 4 (Dr.Padma Ariga)** aided in, methodology and statistical analysis and has supervised in preparation of the manuscript

CONFLICT OF INTEREST

None declared.

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