Genetic and Dental Study of Patients with Celiac Disease

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Objectives: *The aim of this work was to study the pattern of inheritance of celiac disease in a group of Saudi patients and to compare oral mucosal and dental clinical findings in these patients to those of healthy controls.* ***Study design:*** *Fifty patients suffering from celiac disease were screened for dental evaluation. They were subjected to clinical genetic examination, pedigree construction, oral mucosal and dental clinical evaluation.* ***Results:*** *An autosomal recessive mode of inheritance was evident in some of the studied cases, while others showed sporadic occurrence. Oral mucosal and dental clinical examinations revealed recurrent oral ulcerations, enamel hypoplasia in most of the celiac disease patients.* ***Conclusions:*** *Pedigree analysis of families is important to identify the mode of inheritance. Oral mucosal and dental clinical examinations are important in diagnosing and monitoring cases of celiac disease.*

Keywords: *genetic and dental study, patients, celiac disease*
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INTRODUCTION

Celiac disease (CD) is a familial, autoimmune disease caused by sensitivity to dietary wheat gliadins as well as related prolamins in rye and barley.[1,2] It is one of the most significant causes of chronic malabsorption in children, with symptoms including diarrhea, abdominal pain and growth failure. Symptoms in adulthood include anemia, fatigue, weight loss, diarrhea, constipation, infertility and neurologic symptoms, although occult disease is frequently present with minimal symptoms. [3]

The earliest evidence that genetic factors are of significance in celiac disease consisted of isolated reports of multiple cases occurring within families. Subsequently, family studies using clinical criteria to determine which family members were affected clearly demonstrated that GSE occurred more frequently in the relatives of patients than in the general population.[4] In addition, most reported monozygotic twin pairs were concordant for the disorder, emphasizing the importance of genetic factors.[5] Despite these observations, the mode of inheritance remained unclear.

Families with multiple cases of CD are common, and estimates for the risk to siblings have ranged from less than 5% to greater than 20%, with most estimates between 10 and 12%.[6-9] CD has a strong genetic association with the human leukocyte antigen (HLA) class II genes DQA1 and DQB1, with approximately 90% of celiacs carrying the DQ2 genotype and 5% carrying the DQ8 genotype.[10] However, the HLA association alone is insufficient to explain the hereditary nature of the disease, and is estimated to explain less than half the sibling risk, indicating the presence of one or more additional susceptibility loci.[11-14]

The patients suffering from CD are also prone to have associated autoimmune disorders such as type I diabetes and Sjögren syndrome (SS).[15]

Extraintestinal manifestations such as dermatitis herpetiformis and osteoporosis are common in CD.[16, 17] Oral involvements consists of celiac-type dental enamel defects in permanent teeth of 50-80% of adult patients and mucosal inflammatory changes including recurrent aphtous ulcers and angular cheilitis.[18-20]

As oral manifestations occur frequently in individuals suffering from CD or SS, subjects having concomitantly both disorders might even be at higher risk, and require thus additional preventive measures and thorough treatment. [21]

The aim of this work was to study the pattern of inheritance of celiac disease in a group of Saudi patients and to compare oral mucosal and dental clinical findings in these patients to those of healthy controls.

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