Assessment of celiac disease and their effects on quality of life in children: A clinical study

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Abstract
Background: Celiac disease (CD), an immune-mediated systemic disorder. The present study was conducted to assess celiac disease and their effects on quality of life in children.

Materials & Methods: The present study was conducted on 43 children age ranged 6-15 years of age with celiac disease. Equal numbers of controls were selected. Quality of life was assessed using PedsQL 4.0, with 23-item multidimensional generic core scales. Raw scores were assessed based on a 5-point Likert scale (0 = never a problem; 1 = almost never a problem; 2 = sometimes a problem; 4 = almost always a problem), which was reverse-scored and linearly transformed to a 0-100 scale (0 = 100, 1 = 75, 2 = 50, 3 = 25, 4 = 0), with higher scores indicating better HRQoL.

Results: Age group 6-7 years had 4 males and 6 females, 8-9 years had 5 males and 4 females, 10-11 years had 3 males and 6 females, 12-13 years had 3 males and females and 14-15 years had 5 males and 4 females. The mean PedsQL score in celiac group was 72.4 and in control group was 80.2, state anxiety score was 35.2 in celiac group and 32.4 in control group, trait anxiety score was 34.1 and 30.9 in celiac and control group respectively. Depression score was 14.2 and 10.5 in celiac and control group respectively. The difference was significant (P< 0.05).

Conclusion: Authors found that there was significant difference in quality of life of celiac and normal children.

Keywords: Celiac disease, Children, Gluten

Introduction
Celiac disease (CD), an immune-mediated systemic disorder in genetically predisposed individuals initiates through the ingestion of gluten and related prolamins such as cereals (wheat, rye, and barley) containing gluten, a protein complex [1]. The overall global prevalence of CD is estimated to be 1%, but it varies depending on age and country of origin of the study population. Furthermore, many researchers acknowledge that the current prevalence of the disease may be underestimated due to under diagnosis [2]. Children, especially if they are ill, can show very intense emotional reactions. This can affect their social functioning because of their feelings of shame; children can avoid contacts and having meals with others and, on the other hand, their peers sometimes may have a problem in social acceptance of celiac patients [3].

The basis of the disease and the key finding in its diagnostics is gluten-sensitive enteropathy, i.e. a nonspecific inflammation of the small intestinal mucosa that resolves by gluten-free diet [4]. Besides enteropathy, either symptomatic or asymptomatic, the disease is also characterized by different extra intestinal manifestations, as well as potentially severe complications. As it is disclosed in only 1:5-13 cases, today celiac disease is ranked as the most frequent chronic disease of the modern man [5]. The present study was conducted to assess celiac disease and their effects on quality of life in children.

Materials & Methods
The present study was conducted in the department of pediatrics. It comprised of 43 children age ranged 6-15 years of age with celiac disease. Equal numbers of controls were selected. The study protocol was approved from ethical committee. Parents were informed regarding the study and written consent was obtained.

Data such as name, age, gender etc. was recorded. A thorough clinical examination was done in all patients. Quality of life was assessed using PedsQL 4.0, with 23-item multidimensional generic core scales. Raw scores were assessed based on a 5-point Likert scale (0 = never a problem; 1 = almost never a problem; 2 = sometimes a problem; 4 = almost always a problem), which was reverse-scored and linearly transformed to a 0-100 scale.
(0 = 100, 1 = 75, 2 = 50, 3 = 25, 4 = 0), with higher scores indicating better HRQoL. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

**Results**

**Table 1: Distribution of patients**

| Age group (Years) | Males | Females |
|-------------------|-------|---------|
| 6-7               | 4     | 6       |
| 8-9               | 5     | 4       |
| 10-11             | 3     | 6       |
| 12-13             | 3     | 3       |
| 14-15             | 5     | 4       |
| Total             | 20    | 23      |

Table I shows that age group 6-7 years had 4 males and 6 females, 8-9 years had 5 males and 4 females, 10-11 years had 3 males and 6 females, 12-13 years had 3 males and females and 14-15 years had 5 males and 4 females.

**Table 2: Assessment of Quality of life**

| Scores            | Coeliac group | Control | P value |
|-------------------|---------------|---------|---------|
| Peds QL           | 72.4          | 80.2    | 0.01    |
| State anxiety score | 35.2       | 32.4    | 0.02    |
| Trait anxiety score  | 34.1       | 30.9    | 0.04    |
| Depression score   | 14.2          | 10.5    | 0.001   |

Table II, graph I shows that mean Peds QL score in celiac group was 72.4 and in control group was 80.2, state anxiety score was 35.2 in celiac group and 32.4 in control group, trait anxiety score was 34.1 and 30.9 in celiac and control group respectively. Depression score was 14.2 and 10.5 in celiac and control group respectively. The difference was significant (P< 0.05).

**Conclusion**

Authors found that there was significant difference in quality of life of Coeliac and normal children.

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