

Adherence to Gluten Free Diet in Pakistan-Role of Dietitian

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WHAT IS CELIAC DISEASE?

Celiac disease (CD) is a common multi-system autoimmune disease, affecting approximately 1% of people worldwide ¹. Predisposed individuals develop an immune response to gluten, a protein found in the cereal grains: wheat, barley and rye. Autoimmune intestinal damage is the cardinal feature of celiac disease, and typically involves villous atrophy, crypt hyperplasia, and increased intraepithelial lymphocytes ². Symptoms may be subclinical, varying from gastrointestinal upset to severe malabsorption ^{3,4}. Skin, nervous system, and multisystem involvement is also recognized. Strict avoidance of gluten-containing foods can reverse both enteric and extra-intestinal manifestations of the disease.

PREVALENCE OF CELIAC DISEASE IN THE WORLD:

In many developed countries like UK and Australia, dietitians are specialized in food allergies; thus being able to educate and conduct research in this field and can facilitate in shopping skills, cooking skills and in modifying recipes. Celiac disease has been reported from North and South America, Europe, Australia, Africa, Middle East, Iran and India. Although the exact prevalence of celiac disease in Pakistan is not known, it is felt to be a common disorder present in all four provinces.

INTERNATIONAL CELIAC DAY:

16th May is International Celiac disease day. Nutritionists and Dietitians can arrange seminars, talk shows such events that are aimed at raising awareness of celiac disease and its symptoms amongst medical professionals and the general public.

WHAT TO DO WHEN SUFFERING FROM CELIAC DISEASE?

One of the safest solution identified till date is lifelong exclusion of food items containing gluten but this exclusion is a challenge for people suffering from celiac disease and their family members. Although straightforward in principle, strict avoidance of gluten is challenging in practice. These problems are further aggravated due to lack

of awareness among public and even health professionals. Moreover, many people with celiac disease might also suffer from other autoimmune diseases, for example if the person is suffering from Type 1 diabetes along with the celiac disease, it might lead to further reduction in food choices. Additionally, in certain life stages it can be more difficult to follow gluten free diet such as teenage and pregnancy. Here the role of dietitians and nutritionists step in providing updated knowledge and skills regarding what to eat in this phase. Moreover, dietitian involvement was recommended in the National Institutes of Health (NIH) Consensus Development Conference on celiac disease (2004).⁵

While a gluten-free diet continues to be the best solution for full-blown celiac disease, an autoimmune condition brought on by exposure to gluten, some enzyme supplements may reduce negative reactions for those with mild gluten intolerance. There are no supplements that cure celiac disease or reverse gluten intolerance. But a specific type of enzyme can help enhance the breakdown and digestion of gluten.

DPP IV-Since gluten is made up of a combination of proteins, a combination of enzymes may help to break it down. DPP IV, short for dipeptidyl peptidase IV, is an enzyme blend designed to break down bonds that hold gluten proteins together, and thus to enhance their digestion. Products containing DPP IV are ideal for targeting hidden sources of gluten, whether from restaurant meals or accidental cases of cross-contamination. And if you don't have celiac disease, DPP IV can help reduce symptoms from that occasional splurge on gluten-containing foods; although, again, the enzymes are intended as more of an insurance against accidental gluten ingestion.⁷

WHAT CELIAC PATIENTS SHOULD CONSUME OR AVOID?

Individuals with celiac disease should not consume any of the following gluten containing grains; Wheat (including atta, maida, sooji), Barley, Rye, Triticale (a cross between wheat and rye). However, the following foods are safe for

patients with celiac disease if free from gluten contamination; Rice, corn (makai), Millett (bajra), Lentils and Pulses (daal), Oats (only if pure and uncontaminated), Nuts and seeds, All fruits and vegetables, Milk and dairy products, All types of meats, Eggs, Salt, pepper, turmeric and other spices, Water, tea, fruit juices and most other beverages.⁶

In Pakistan, the staple diet is chapatti or roti mainly made of wheat which is rich source of gluten. In some parts of Pakistan, there is custom of consuming oat (Joe) roti. Though oat does not contain gluten, however, milling process takes place in same area, thus chances of cross contamination and therefore is restricted for coeliac patients. For example, the preparation of corn flour on the same machine that makes wheat flour (atta) may lead to cross contamination with gluten. Therefore, corn flour made on such a machine will not be safe and even a small amount of gluten can lead to problems.

IMPORTANCE OF DIETITIANS IN PROMOTING TECHNOLOGY TO PROVIDE KNOWLEDGE ON CELIAC DISEASE TO PATIENTS:

We are living in an era of modern technology and use of it in healthcare is on rise. So in addition to development of print material, dietitians can create awareness for patients on the use of websites of containing information on celiac disease such as Dietitian Association of Australia and British Dietetic Association. Similarly, nowadays apps on Android phones are available for gluten free diet. However, the limitation of such websites and Apps is that it provides information regarding western foods, thus limited implication in Pakistan.

Also the use of technology can save patients time and money. Dietitians and Nutritionists can develop awareness how to use this technology. Moreover, there is extreme shortage of dietitians in Pakistan, especially in rural areas and this shortage can be overcome by the use of technology as internet is available even in remote areas of Pakistan. The dietitians can also suggest patients and family members to join facebook page and share their stories and experiences to help other patients suffering from the same disease. They can also share recipes and these activities can reduce sense of isolation among patients.

In this manner, nutritionist and dietitians in Pakistan can help transform scientific knowledge into practical information.

- **SHOPPING SKILLS:**

It is important to prefer fresh fruits and vegetables. Frozen and canned fruits, Dried fruits (dates) and vegetables can be preferred if they are not dusted with oat flour. Fresh meat,

fish, and poultry, Meat marinades and flavorings, Tofu can also be taken if they do not contain any seasoning made with wheat derivatives. Milk, buttermilk, cream Milk, buttermilk, cream Most yogurt (plain, fruited or flavored) Cheese, plain Cream cheese, cottage cheese are all open for patients with celiac disease but be careful with Malted milk Cheese sauces, cheese spreads, flavored cheeses. Flavored teas and coffees, herbal teas, and non-dairy beverages may contain barley malt flavoring or barley malt extract and should be carefully seen. Cocoa drinks may contain malt or malt flavoring (e.g., Ovaltine is NOT gluten free). Honey, jams, jellies, marmalade, molasses, corn syrup, maple syrup, sugar are all safe.

Though in Pakistan, processed food consumption is quite less as compared to western countries, thus majority of Pakistani population do not have good label reading skills. In western countries, most of the food items are packed and government regulatory agencies are quite strict in meeting standard of food labels. However, in Pakistan it is general observation that people are not consuming much packed food, secondly, there is no strict rules and monitoring by any regulatory organization. Thus, chances of consuming hidden sources of gluten can be high.

- **COOKING SKILLS:**

In Pakistan, we have helpers at home doing house chores. Therefore, in addition to family members, it is important to train them and explain in local terms regarding potential sources of gluten and signs of coeliac disease. Prior menu planning is important in order to avoid last moment hassles. This includes advance grocery shopping, involvement of all family members in menu planning and cooking steps.

- **COOKING GADGETS:**

It is better to have separate rolling pin and board and toaster, if not possible, gluten free chapatti and bread should be cooked/toasted first. After using for regular bread, clean well toaster. Similarly, gluten free meals should be prepared first.

- **MENU PLANNING:**

The best approach can be to involve family members in menu planning. This can reduce the sense of isolation among such people, for example, one day all family members may consume gluten free diet.

- **DINE OUT:**

Dine out can be the most challenging as nowadays due to aggressive marketing strategies, there is great trend of dine out in Pakistan. On other hand, hardly any restaurant is offering gluten free diet.

ORGANISATIONS FOR CELIAC DISEASE**AWARENESS:**

In developed countries such as UK and Australia, there are non-profit associations facilitating people suffering from celiac disease as well as health professionals collaborating with food industry and supporting researches conducted on celiac patients. Similarly, “PAKISTAN CELIAC SOCIETY” is working for such patients and their family members in Pakistan.

GLUTEN FREE DIET AT EDUCATIONAL INSTITUTE:

Parents should inform the teachers and administered staff regarding food allergy of their child. In Pakistani culture, many parents feel ashamed to disclose illness especially for female child. Thus, it is important to minimize stigma associated with celiac disease. The child should also be counselled to avoid sharing his/her lunch. The parents should be encouraged to give homemade lunch to their children. Nutritionist can provide recipes and useful websites for healthy lunch options to the mothers. Another tip for improving diet consultation can be “Emphasize what to eat rather than what not to eat”.

Though few food industries and bakeries provide gluten-free products in Pakistan, however, such products are expensive and available on few leading grocery stores and there is lack of awareness among the people that such products are available. The dietitians can develop collaborations with food industry and involve in gluten free products. Similarly, they can develop awareness via social media such as Facebook, blogs or writing articles for general public in Newspaper. Similarly, there is trend of morning shows, where nutritionist can openly allow mothers to ask queries regarding celiac disease.

MANAGING CELIAC DISEASE WITH OTHER CO-MORBIDS:

As celiac disease is an auto immune disease, there are chances of developing other autoimmune diseases as well. For instance, such patients especially children with coeliac disease might suffer from Type 1 diabetes or multiple sclerosis. It is common observation that family members are trying to cure Type 1 in similar way as Type 2 diabetes among elderly patients in family members. The dietitians can develop awareness that apart from dietary management of two auto immune diseases, the child needs balance diet for proper growth and development. Thus regular consultation and monitoring of growth is an essential part of disease management. Unfortunately, there is lack of awareness and such child suffer from severe nutritional deficiencies.

Similarly, secondary lactose intolerance is also common among such patients. In such cases, local greens (Sagg), oranges, dried figs (Injeer) and nuts can be alternate source of calcium.

In rare cases, gluten free diet does not mean zero gluten. According to FDA, 20PPM is allowed, in layman language it is 20g/kg of flour. Additionally many non-food items and medicines contain gluten. Common examples are glue, Play-Doh, multivitamins, over the counter medicine and lipsticks and toothpaste. Thus it is important for people suffering from coeliac disease to develop habit of label reading on medicines as well. Again dietitians can play an important role in developing awareness for such things. It is important to differentiate between terms Gluten free, reduced gluten and low gluten products. According to Coeliac UK, that there is no term as “No-Gluten containing ingredients”.

CHALLENGES TO FACE WHILE PREPARING GLUTEN FREE PRODUCTS:

A great challenge Pakistanis face while preparing gluten free products is to prepare food on events such as weddings, Eid and other social gatherings. Vermicelli (Siwayyan), Nihari, drumsticks, can be hidden source of gluten. Sometimes, ketchup, mayonnaise, salad dressings, white pepper and even toothpaste can contain hidden gluten. Gluten may also be present in gravies thickened with flour or in those flavored with soy sauce or malt vinegar. Soy sauce is a common ingredient in many marinades and sauces served in restaurants and sold in grocery stores. Sausages, meatloaf, meatballs, and other ground meats often contain wheat-based fillers. Breadcrumbs may be added to hamburger patties to bind the meat and improve texture. Many vegetarian meat alternatives, such as veggie burgers and vegetarian sausages, are made with seitan, also known as wheat gluten. Others are made with gluten-containing flours or breadcrumbs that act as binders. And while tofu in its unadulterated form is gluten free, the fried tofu served in restaurants may be fried in a gluten-containing batter or marinated in a soy sauce that contains wheat. Whole potatoes found in the produce department in supermarkets are gluten free, but potato chips and fries can be hidden sources of gluten. Potato chips may be seasoned with malt vinegar or contain wheat starch. Even if patient choose any item which is apparently gluten free, however there is high chance of cross contamination.

CODE WORDS FOR HIDDEN GLUTEN

Clients and patients who must eliminate gluten from their

diets not only must become aware of the many foods in which gluten can hide, but they also must learn the names of ingredients that masquerade as gluten on ingredient lists. Code words such as “fried,” “coated,” “crispy,” or “crusted” should raise a red flag, alerting clients that the food may contain gluten, Begun says, noting that these descriptors in particular may indicate the food is coated in a breading or gluten-containing flour before its fried.

CONCLUSION:

There is strong need of Multidisciplinary approach, which includes, doctors, dietitians, media and food industry to check for minor details when giving gluten free diet. In Pakistan, there are registered dietitians working in different hospital settings. There is need to train health professionals especially doctors and nutritionist regarding updated knowledge and skills to follow gluten free diet. Group education sessions can be conducted for parents and care givers, especially those who have family history of celiac disease, school teachers and food industry.

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