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IMPROVING LIVES THROUGH AWARENESS, EDUCATION, AND RESEARCH

Celiac Disease and Type 1 Diabetes: Autoimmune Disorders with Common

Roots By Louis H. Philipson, MD, PhD; Director, The University of Chicago Kovler Diabetes Center; Professor of Medicine and Pediatrics, University of Chicago Pritzker School of Medicine; with Jennifer Martin, Writer, Kovler Diabetes Center

Celiac disease is receiving increasing attention in the media as awareness levels grow regarding this digestive disorder, which is estimated to affect more than 3 million Americans.

Less discussed in the media is the connection between celiac disease and autoimmune Type 1 diabetes. About 2.5 million people in the United States have Type 1 diabetes, and while the peak age of onset is in the childhood to young adult age groups, it can affect people from about 6 months of age on up.

Estimates are that about 1 in 10 people with Type 1 diabetes in the United States also has celiac disease, compared with an estimated 1 in 100 in the general population. Evidence suggests that these two autoimmune disorders, similar to many other autoimmune diseases, result from particular genetic predispositions and may be triggered by environmental causes of various kinds.

Autoimmune disorders result when the body's leukocytes (white blood cells), which normally fight infection, attack and destroy what we think is healthy tissue (but that assumption is being challenged by current research). Patients with Type 1 diabetes are at risk for the development of other autoimmune diseases. For example, approximately 1 in 10 will develop an overactive or underactive thyroid (thyroid autoimmunity). We typically screen patients with diabetes for some of the more common associated disorders. The most common are celiac, thyroid and adrenal disorders, but there are many other autoimmune syn-

dromes that endocrinologists may encounter.

A recent study at the Barbara Davis Center for Childhood Diabetes, in Aurora, Colo., indicated that an impressive 33 percent of young patients with Type 1 diabetes showed signs of celiac disease or other autoimmune conditions at the time of diagnosis with diabetes. Researchers selected 491 children who were newly diagnosed with Type 1 diabetes and screened them for three other autoimmune disorders: celiac disease, autoimmune thyroid disease and Addison disease (a malfunction of the adrenal glands of the kidneys; the most famous person with this disorder was President John F. Kennedy).

The researchers found 57 children tested positive for tissue transglutaminase autoantibodies (tTG-IgA) in a blood test, considered a strong indicator of celiac disease. Of those 57 children, 14 ultimately tested positive for celiac disease. Others may yet go on to develop celiac disease ion the future. Of the 491 children in the study, 122 tested positive for thyroid peroxidase autoantibodies (TPOAb), a marker for autoimmune thyroid disease. Of those 122 children, 15 were confirmed to have thyroid disease. Similarly, antibody-positive patients are monitored for thyroid function levels periodically. Finally, only five children of the 491 carried 21-hydroxylase autoantibodies (21OHAb), an indicator of Addison disease; one of those



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five had the condition as determined by follow up testing.

The findings point to the importance of further research on the potential connections between Type 1 diabetes and other autoimmune diseases. At the University of Chicago, we are collecting families with unusually early onset of autoimmune diabetes and families with multiple kinds of autoimmunity in various individual family members to get a better understanding of genetic influences.

The development of a cure for Type 1 diabetes remains elusive, as recent clinical trials have been disappointing, but we are learning more as we study its similarities to other autoimmune diseases. One of our colleagues, Dr. Sasha Chervonsky, has made some exciting discoveries on the relationship of the bacteria in the gastrointestinal tract to development of autoimmune diabetes in mice, suggesting that one day a probiotic might be used for prevention of autoimmunity. In the meantime, pediatricians and researchers have recognized



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Stefano Guandalini, M.D. Founder and Medical Director

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The University of Chicago Celiac Disease Center is dedicated to raising awareness and diagnosis rates and meeting the critical needs of people affected by celiac disease nationwide through education, research and advocacy.

The contents of this newsletter are not intended to diagnose or recommend treatment for celiac disease. Please consult your healthcare provider with questions about your condition.

For more information about The University of Chicago Celiac Disease Center, please contact our office:

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the importance of autoimmune screenings for patients with Type 1 diabetes.

As part of their routine care, all newly diagnosed Type 1 diabetes patients at Kovler Diabetes Center are tested for celiac disease and at intervals thereafter, in accordance with recommendations from leading physicians and medical organizations including the North American Society for Pediatric Gastroenterology and Hepatology. The appearance of celiac disease in patients with Type 1 declines with age, so adult endocrinologists typically do not screen older patients as often unless there is reason for suspicion that celiac is present. Patients are also periodically screened for anti-thyroid and anti-adrenal antibodies, particularly if there is a family history of related disorders.

Physicians will diagnose increasing numbers of patients with celiac disease in coming years, especially as Type 1 diabetes patients

receive routine screenings even in the absence of symptoms. At the Kovler Diabetes Center, we are fortunate to collaborate with the exceptional specialists at the Celiac Disease Center as we diagnose and treat these patients. We are proud of our diabetes educators and registered dieticians who can combine excellent advice on food and nutrition in diabetes with the special requirements of patients with celiac disease to avoid gluten. Often a gluten-free diet means a diet somewhat higher in carbohydrates than otherwise. This is something that we can recognize for its effect on insulin requirements and potential weight gain. Ideally, with screening and appropriate dietary intervention, we can mitigate the effects of the disease and improve the quality of life for individuals with both diabetes and celiac disease until additional therapies are developed.

RESEARCH WRAP-UP

The University of Chicago Celiac Disease Center is beginning a study to evaluate the performance of a new test for the antibodies associated with celiac disease. Typically, people with celiac disease have elevated levels of certain antibodies in the blood, including tissue transglutaminase (tTG), anti-endomysium antibodies (EMA), and deamidated gliadin peptides (DGP).

To qualify for this study, you must be a patient at the University of Chicago Medical Center. You must have positive blood tests for the antibodies associated with celiac disease, or you must have been recently diagnosed by a scope with biopsies (upper endoscopy).

Subjects who agree to participate in this study will have about 1 teaspoon (3 mL should this be ml) of blood drawn at the University of Chicago Medical Center.

For participation in this study you will receive \$50 in the form of a check.

>> If you would like to participate in this study or have further questions about the study, please email or call our Research Coordinator, NurAlima Grandison, at **ngrandison@uchicago.edu** or (773) 702-3572.

Our 2011 Research Report is coming out soon, and will summarize the exciting new developments in celiac research that have taken place over the past year.



International Celiac Disease Symposium 2013

Although the International Celiac Disease Symposium (ICDS) is still two years away, the University of Chicago Celiac Disease Center is already going full steam in terms of preparations for it. The date is set (September 22-25, 2013), the venue has been confirmed (Sheraton Chicago Hotel and Towers) and the Scientific Committee, led by Center Medical Director Dr. Guandalini and consisting some of the most esteemed celiac researchers in the world, has been established to invite speakers and review scientific posters for display. The ICDS 2013 website is up and running, and will be modified continually as new information becomes available. Please go to www.ICDS2013.org and sign up, to be sure of receiving all updates in a timely manner.

On the Radar Screen—A Full Calendar of Upcoming Events at the University of Chicago Celiac Disease Center

Annual Blood Screening, Oct. 15, 2011, 8:30 a.m. to Noon: The Annual Blood Screening registration is now closed and there will be no walk-ins at the screening. However, Q & A Panel with a number of University of Celiac Celiac Disease Center Experts and the Gluten-Free Vendors Fair are open to all. The Q & A Panel starts at 10:30 a.m. The Gluten-Free Vendors Fair runs from 8:30 a.m. to Noon. No reservation is necessary for those events. All three events will be held on the fourth floor of the Duchossois Center for Advanced Medicine (DCAM), at 5758 S. Maryland Avenue.

For directions, please visit http://www.uchospitals.edu/visitor/directions/.

Preceptorship Program, December 1 and 2, 2011: We will be holding a two-day intensive preceptorship training program in celiac disease for physicians and dietitians. The program is now closed to participants. If you are interested in learning more about the program and possibly participating next year, please visit http://www.celiacdisease.net/preceptorship-program.

Gluten-Free Week at Wildfire Restaurant, November 7-11, 2011: All Chicago area Wildfire Restaurants will once again hold their annual Gluten-Free Week of special events, with a custom prix fixe four-course dinner, with or without wine pairings, at a different Chicagoland Wildfire location Monday through Friday of this week. A portion of the proceeds will be donated to The University of Chicago Celiac Disease Center. For more information, please contact Laura Rosen or Shannon Ryan at 312-787-9000. You can also visit Wildfire Chef Joe's blog at: http://www.wildfirerestaurant.com/chefs-corner/gluten-freeweek2011. The specific dates at each Chicagoland Wildfire location are:

Wildfire Oakbrook, 11/7/11
Wildfire Chicago, 11/8/11
Wildfire Glenview, 11/9/11
Wildfire Schaumburg, 11/10/11
Wildfire Lincolnshire, 11/11/11

Celiac Skate, February 26, 2012, 1 p.m. to 3 p.m.: Come skate and support The University of Chicago Celiac Disease Center in the annual Celiac Skate! Held at Centennial Rink In Highland Park, IL, this is great fun for the whole family, and a wonderful way to show your support for The Center and for the incredibly dedicated group of families that put this event on each year. Tickets will be available soon on our website, www.celiacdisease.net. Please keep checking!

South Florida Gluten-Free Expo, February 18, 2012, 11 a.m. to 4 p.m.: The Univiersity of Chicago Celiac Disease Center will be at this Expo, meeting South Floridians and snowbirds, and talking to them about our resources. If you are in the area, please stop in and see us.

Spring Flours, April 20, 2012, 6 p.m. to 10 p.m.: Our annual fundraising gala promises to be better than ever this year. We will feature new and different restaurants and a fabulous auction. More information coming soon.

LIKE US, FRIEND US, FOLLOW US ON FACEBOOK & TWITTER!

The University of Chicago Celiac Disease Center has a Facebook page and a Twitter account. You can view our Facebook page at http://twitter.com/cureceliac. We will be tweeting as much as possible from our upcoming events, and look forward to many lively discussions on Facebook.



Care Package Program

The University of Chicago Celiac Disease Center's Care Package Program is going strong. We look forward to welcoming new partners at the beginning of 2012, and to working with old friends as well. If you are newly diagnosed with a biopsy and need to receive a Care Package, please contact our office at (773) 702-7593. We will determine your eligibility for the Care Package, and will then send you a link to the form, with a temporary password.

As always, we thank all our partners for their dedication and support to this important cause.

Apple's Bakery and Gluten-Free Kitchen

Bakery on Main

Betty Crocker

Bhuja

Bob's Red Mill

Bready

Cabot Creamery

Chēbē

Dr. Schär

Enjoy Life Foods

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Glutino Food Group

Green Giant Jones Sausage

Kettle Cuisine

Ian's Natural Foods

L & J Popcorn

Lärabars

Lifeway Foods

Lucini Italia

Crunchmaster

Namaste Foods

Progresso

Rice Chex

Rudi's Gluten-Free Bakery

save the date

APRIL 20 2012 SPRING FLOURS BENEFIT

Reaching Out

The University of Chicago Celiac Disease Center continues to reach out to the celiac community in many different ways. One key way to get to know more people and to introduce ourselves and our services to them is by attending some of the many conferences and Gluten-Free Expos around the country. While we lack the staff and resources to attend all of them, we strive to find a balance to visit different areas of the country and different audiences.

At the American Dietetic Association's annual Food & Nutrition Conference & Expo this year in San Diego, we were delighted to meet over 300 dietitians, to let them know about the services and resources we have available for them and their patients. The following week we could be found at the Gluten-Free Expo in Dallas, where we received a Texas-sized welcome. We have worked with Texas support groups in the past, and it was a pleasure to put names and faces together and to reach out to this community, to them know that we are there for them, and our services, programs and information line are open to all.



If you know of a gluten-free conference in your area, please let us know, and we will do our best to be there. If you would like brochures or other information about the University of Chicago Celiac Disease Center to distribute on your information table or in goody bags, please contact us at (773) 702-7593 at least six weeks before the event.