PPT ARTICLE

CELIAC DISEASE

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Medical & Clinical Research

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OBJECTIVES

- Definition
- Clinical Presentation
- Diagnosis
- Screening
- Follow up
- When to refer

WHAT IS CELIAC DISEASE ?

"A chronic, small intestinal immune-mediated enteropathy precipitated by exposure to dietary gluten (or related rye and barley proteins) in genetically predisposed individuals" resulting in malabsorption.

The condition may develop at any age.

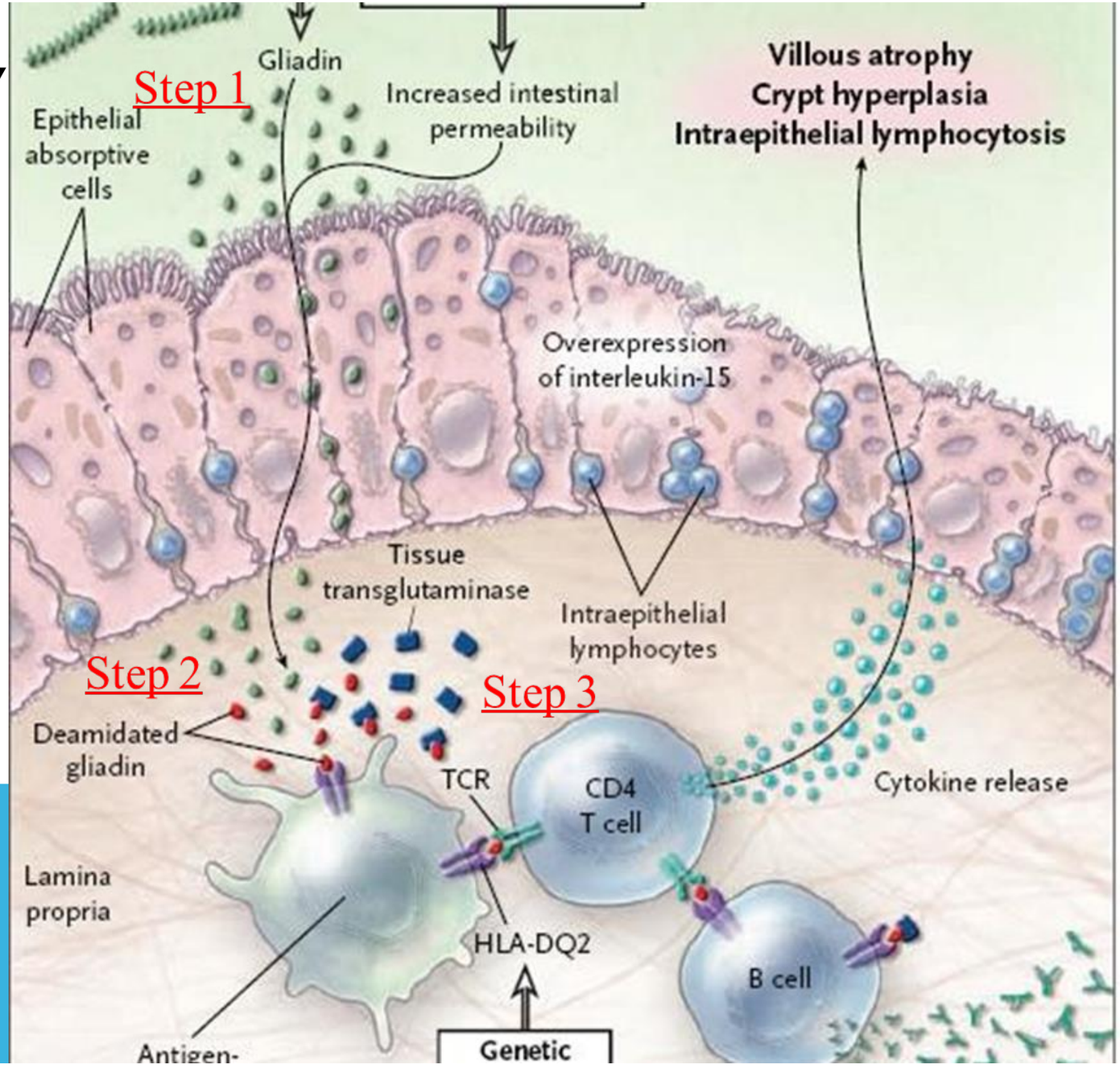
PATHOPHYSIOLOGY

Gluten Entry into the Submucosa

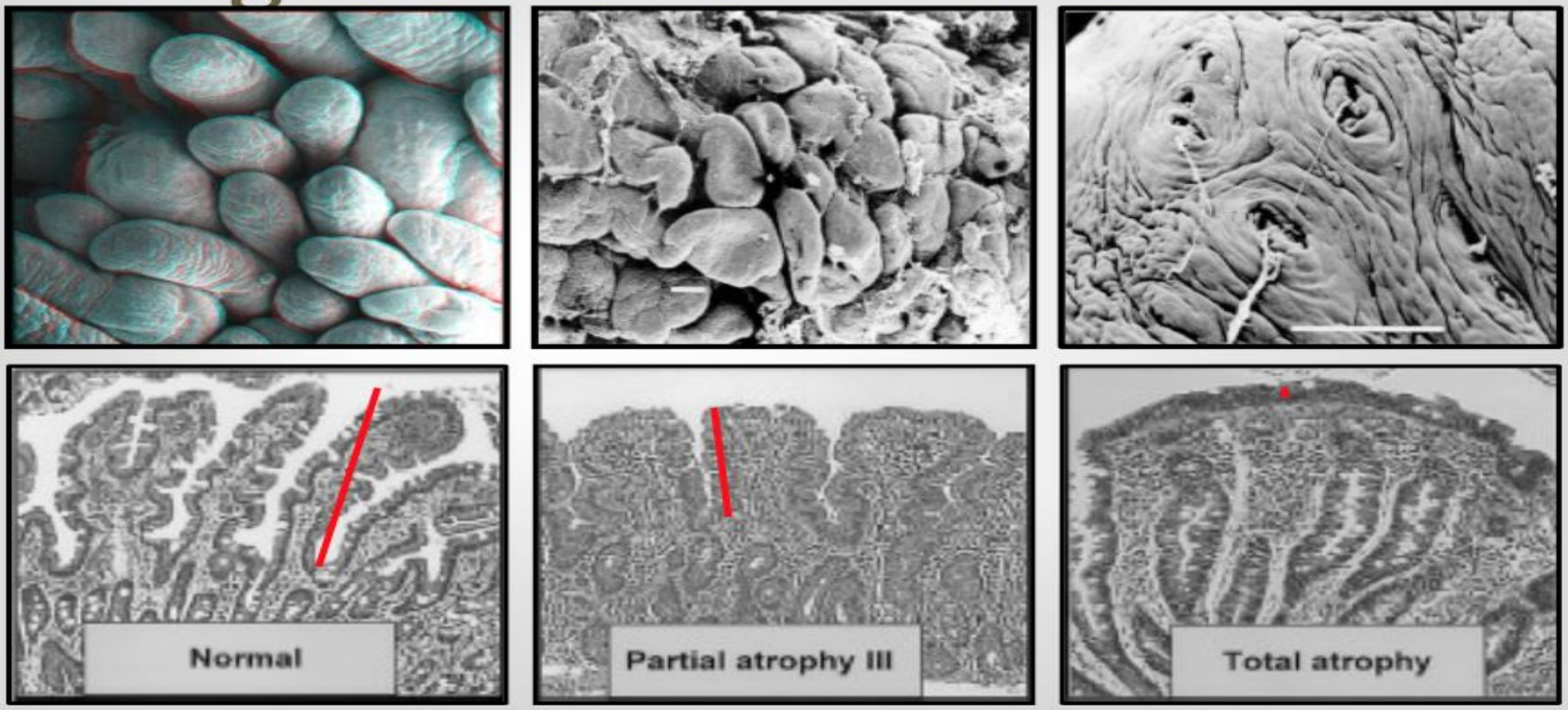
Deamidation of Gluten by Tissue Transglutaminase (tTG)

will bind to the human leukocyte antigen class II DQ2 or DQ8

Autoimmune activation



Progression of disease



- characterized by chronic inflammation of the small intestinal mucosa, which leads to atrophy of the small intestinal villi and subsequent malabsorption.

RISK FACTORS :

Risk increased by:

- Repeated **rota virus** infections
- Gluten introduced in **first 3 months of life**

Risk decreased by:

- Prolonged **breastfeeding**
- Introduction of gluten during breastfeeding

WHEN TO SUSPECT CELIAC DISEASE ?

WHAT IS THE TYPICAL PRESNTATION ?

The clinical manifestations of celiac disease vary and involve multiple organ systems

Many patients are asymptomatic or only minimally symptomatic.

Manifestations can be categorized :

- Intestinal manifestations.
- Extraintestinal manifestations

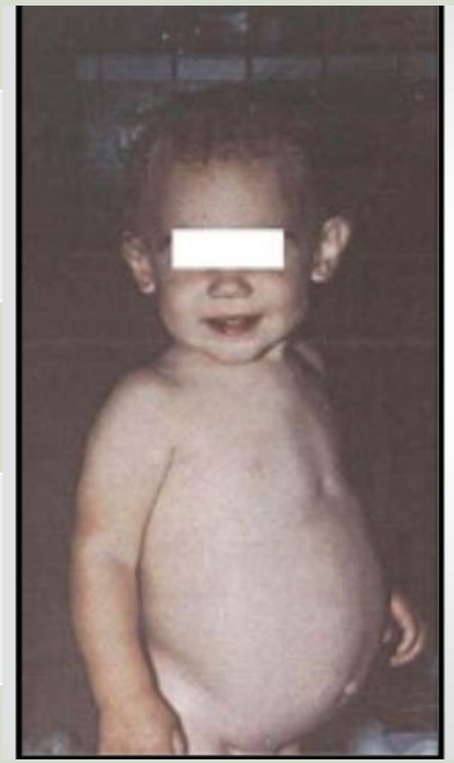
Most cases of celiac disease are diagnosed in persons with extraintestinal manifestations

Intestinal Manifestations

Most common age of presentation: 6-24 months

Lactose intolerance

- Inability to digest milk or other (dairy products) because of mucosal injury
- When mucosa heal lactose can be included in the diet



Malabsorption syndrome

- Diarrhea, weight loss, abdominal bloating and distension, flatulence, steatorrhea
- Classic presentation of celiac disease has become less common

Nutritional deficiencies

- Deficiency of fat-soluble vitamin(A, D, E, K)
- B vitamins , iron, calcium and folic acid

Extraintestinal Manifestations

Most common age of presentation: older child to adult

Anemia

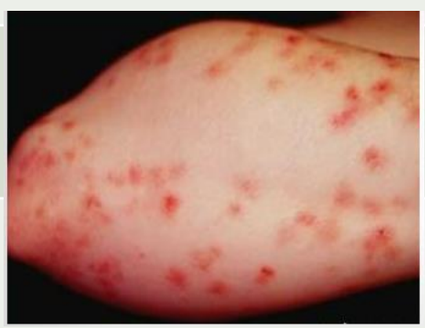
- Typically caused by malabsorption of iron, folic acid.
- may be the initial presentation of celiac disease .
- anemia of chronic disease can also occur

IDA refractory to oral supplementation

Dermatitis herpetiformis

Pathognominc for celiac

Manifests as a papulovesicular extremely pruritic rash on extensor surfac such as the elbows, knees, buttocks, and scalp. About 80% of pt with dermatitis herpetiformis show histopathologic changes of celiac disease on small intestinal biopsy



Hepatobiliary signs

- Elevated transaminase levels in 20% to 40% of adults at time of initial diagnosis
- resolved with gluten-free diet

Extraintestinal Manifestations

Increased risk of some cancers	**Osteopenia/Osteoporosis**
• Elevated risk of some lymphomas, hepatobiliary and intestinal cancers.	• Increased prevalence of fracture • 1\3 of pt have osteoporosis , 1\3 osteopenia
Neurologic abnormalities	**Hematologic abnormalities**
• Peripheral neuropathy and gluten ataxia, Epilepsy .	Thrombocytopenia, thrombocytosis, leukopenia , coagulopathy * uncommon*
Oral findings	**Reproductive abnormalities** Delayed menarche, secondary amenorrhea, infertility in men and women
• Enamel defects, aphthous ulcers • Delayed tooth eruption in children	**Behavioral with depression, poor school performance**

WHEN TO SUSPECT CELIAC DISEASE ?

History

- Chronic gastrointestinal symptoms
- **Family history** of celiac disease
- History of autoimmune disease or immunoglobulin A (IgA) deficiency.
- Chronic diarrhea
- Failure to thrive in children **
- IDA refractory to oral supplementation

CLINICAL EXAMINATION

- No physical findings (most of pt have silent form)
- Weight loss
- Muscle wasting
- Pallor
- Stomatitis
- Easy bruising

clinical findings of malabsorption

- Dermatitis herpetiformis (most suggestive finding of CD)

DIAGNOSTIC CRITERIA

- The diagnosis is made using a combination of serologic tests, small bowel biopsy, and response to a gluten-free diet

IGA tissue transglutaminase is the first-line test for serologic diagnosis of suspected celiac disease.

- (test of choice) for monitoring of celiac disease

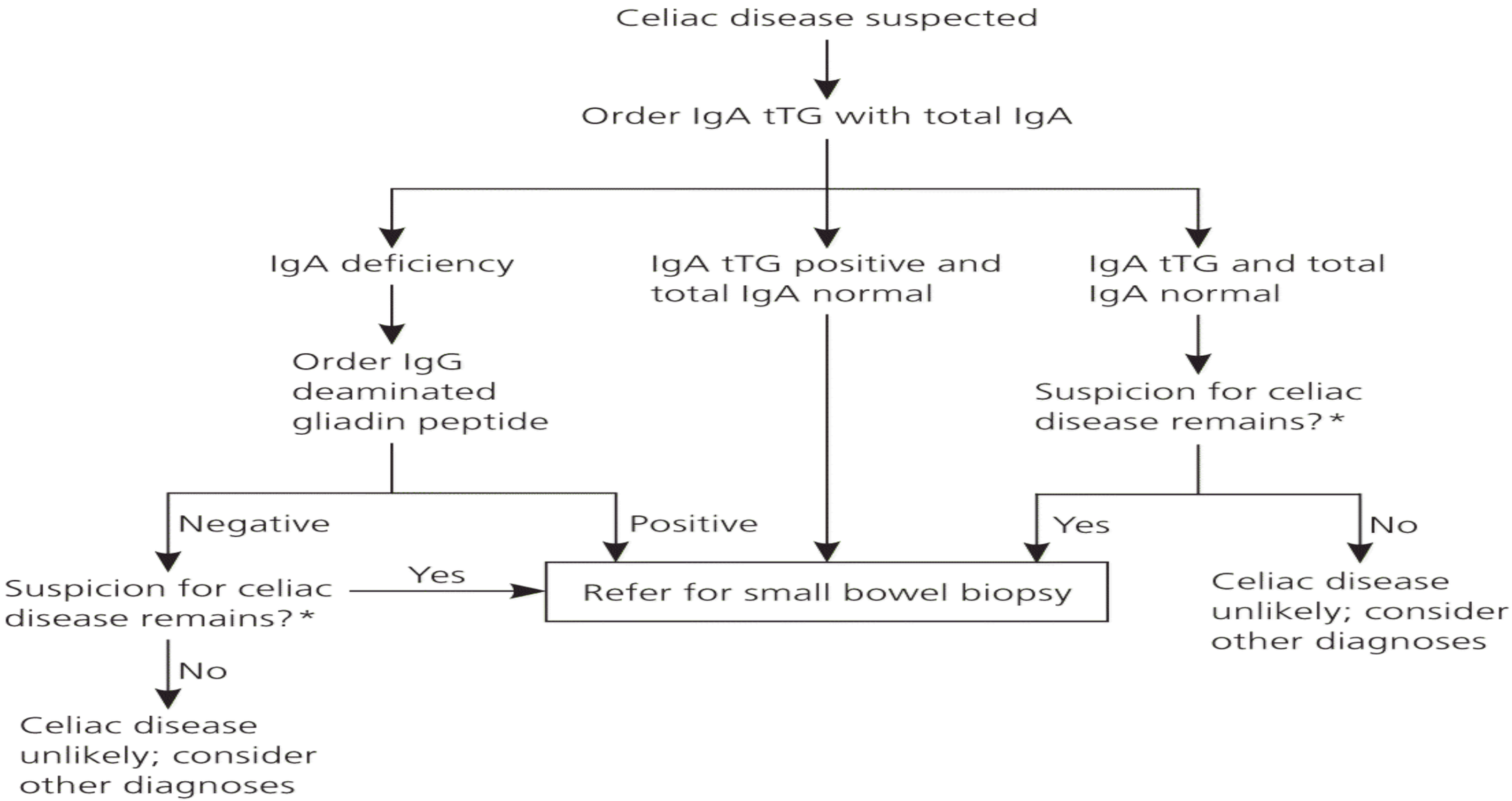
Small bowel biopsy should be used to confirm the diagnosis of celiac disease in most patients.

6 biopsies from the second portion of the duodenum show patchy villous atrophy-

WHEN TO DO THE TESTS ?

Tests need to be performed before the initiation of dietary gluten restriction.

Approach to the Diagnosis of Celiac Disease



TREATMENT

- Diet
- Treat nutritional deficiencies.
- Consider probiotics, digestive enzymes.
- Assess for related conditions
- Screen * family members*
- Follow up and monitor
- Refer

TREATMENT – DIET

- Although histologic improvement may take months to years, approximately 95% of patients who follow a gluten-free diet show clinical improvement within days to weeks.

- The dietary threshold to promote healing of intestinal inflammation in celiac disease has been found to be less than 50 mg of gluten per day.

Only treatment for celiac disease is a gluten-free diet (GFD)

Strict, lifelong diet Avoid:

Wheat Rye Barley

حبوب الجاودار

شعير

Meats, dairy products, fruits, and vegetables are gluten free

Common Sources Of Gluten

-
- Bread
- Bagels
- Cakes
- Cereal
- Cookies
- Pasta/Noodles
- Pastries/Pie
- Rolls
- Salad Dressings

Table 6. Fundamentals of the Gluten-Free Diet

Grains that should be avoided

Barley (includes malt), rye, wheat (includes kamut, semolina, spelt, triticale)

Safe grains (gluten-free)

Amaranth, buckwheat, corn, millet, oats, quinoa, rice, sorghum, teff

Sources of gluten-free starches that can be used as flour alternatives

Cereal grains: amaranth, buckwheat, corn, millet, quinoa, sorghum, teff, rice, montina

Legumes: chickpeas, kidney beans, lentils, navy beans, pea beans, peanuts, soybeans

Nuts: almonds, cashews, chestnuts, hazelnuts, walnuts

Seeds: flax, pumpkin, sunflower

Tubers: arrowroot, jicama, potato, tapioca, taro

Adapted with permission from Green PH, Cellier C. Celiac disease. N Engl J Med. *2007;357(17):1735.*

MONITOR & FOLLOW UP

- Repeat endoscopies are not routinely needed
- Antibodies can be followed every 3-6 months until normalization (IgA tTg & total IgA), then yearly
- Failure of IgA tTG titers to decrease in about six months, suggests continued ingestion of gluten
- If antibody levels are elevated after six to 12 months of adequate dietary treatment, repeat biopsies should be considered

MONITOR & FOLLOW UP

- Vitamins deficiency (A, D, E, B12), copper, zinc, folic acid, ferritin, and iron.
- DEXA scan at diagnosis.
- Vaccinations: yearly influenza, pneumonia vaccine every 5 y due to hyposplenism
- Depression should be routinely monitored for symptoms and treated.

Screening for Celiac Disease

Table 1. Screening for Celiac Disease: Clinical Summary of the USPSTF Recommendation

Population	Asymptomatic adults, adolescents, and children
Recommendation	No recommendation. Grade: I (insufficient evidence)
Risk assessment	Persons at increased risk for celiac disease include those who have a positive family history (e.g., a first- or second-degree relative) and persons with other autoimmune diseases (e.g., type 1 diabetes mellitus, inflammatory luminal gastrointestinal disorders, Down syndrome, Turner syndrome, IgA deficiency, and IgA nephropathy).
Screening tests	Screening for celiac disease is typically not performed in average-risk persons. The standard method of diagnosing celiac disease is the tissue transglutaminase IgA test, followed by intestinal biopsy for histologic confirmation.
Treatment	Treatment of celiac disease is lifelong adherence to a gluten-free diet, which reverses disease manifestations in a majority of patients.
Balance of benefits and harms	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for celiac disease in asymptomatic persons.

NOTE: *For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, go to http://www.uspreventiveservicestaskforce.org/.*

USPSTF = U.S. Preventive Services Task Force.

- Children and adolescents with 1st degree relatives with celiac disease should undergo serologic testing every 2-3 years and at new onset of symptoms
- Serologic testing not accurate in children < 2 years
- (In children and asymptomatic relatives, HLA DQ2/DQ8 testing should also be considered)

REFERAL

- Refer to experienced dietician *all patients* to start GFD, other elimination diets (lactose free, low fructos)
- Refer to celiac support group
- About 5% of patients with celiac disease are refractory to a gluten-free diet. (to gastroenterologist)
- (which may require corticosteroids and immunomodulators, such as Imuran, 6-mercaptopurine, and cyclosporine)

Those patients should be referred to a gastroenterologist to reconsider the diagnosis or for aggressive treatment of refractory celiac disease, which may require corticosteroids and immunomodulators.

REFRENCES


AAFP
AMERICAN ACADEMY OF
FAMILY PHYSICIANS
STRONG MEDICINE FOR AMERICA


U.S. Preventive Services
TASK FORCE


THANK
YOU!