Update on Celiac Disease

Alan Epstein, M.D.
Director GI, Roger Williams Medical Center
Assistant Professor,
Boston University School of Medicine
First some history

* Neolithic Agricultural Revolution
* 1st Century A.D. Aretaeus of Cappadocia
  * “The Coeliac Affliction”
* 19th Century – Dr. Matthew Baillie – the rice diet
* Samuel Gee (pediatrics)
  * “the allowance of farinaceous food must be small”
* 1920’s banana diet – Sidney Haas
* Dicke Dutch Pediatrician – wheat protein
  * Bread shortages
  * Gluten from wheat and rye
* 1950’s – Margot Shiner – jejunal biopsy device
  * The Crosby capsule
  * Rechallenge
* 1960’s – blood antigens
  * Anti-gliadins
  * Anti-reticulins
* 1980’s - Association with type 1 diabetes, Down syndrome
* 1990’s – genes: DQ2, DQ8, tissue transglutaminase enzyme
- Hives / asthmatic symptoms
- More common in infants and children
- IgE to wheat – skin and serum testing
Reminder – gluten is a protein complex found in wheat, rye, barley

* 0.6-1.0% of the world's population, but rising with increasing westernization of diet
* Only about 20% of cases are clinically recognized
* 1.5-2.0 times as prevalent in women
* Type 1 diabetes, Hashimoto’s thyroiditis, Sjögren’s syndrome, IgA nephropathy, Down’s, Turner’s
* IgA deficiency
* HLA-DQZ – 90%, HLA-DQ8 – 5%
Clinical Presentation

- Diarrhea, weight loss, abdominal distension
- Iron deficiency (duodenal role)
- Elevated transaminases
- Fatigue, osteopenia
- Dermatitis herpetiformis
- Gluten ataxia / celiac crisis
- T cell lymphomas, jejunal adenocarcinoma
Refractory Celiac Disease

- After 12 months of true, strict gluten free diet
  - With normal lymphocytes
  - With abnormal lymphocytes
Pathogenesis

ZONULIN

* Antibodies → enteropathy → symptoms
* Seroconversion can occur at any time
* Reversible?
Serologic Testing

- Serum IgA anti-tissue transglutaminase (94% sensitive, 97% specific)
- IgA level
- Can use IgG if IgA deficient
- IgA anti-endomysial – occurs in other autoimmune
- Once gluten restricted - ↓ levels, ↓ sensitivity
Small Intestinal Biopsy

- ↑ intraepithelial lymphocytes
- Elongated crypts
- Villous atrophy
- ? Necessary in children if anti-tTG greater than 10x normal
Gluten free diet (10-50mg/day)
* Nutritionists / labeling
* Mucosa improves in 6-24 months
* Check thyroid, osteopenia/osteoporosis
Other Factors

* Breast feeding
* Gut microbiota
* Age of introduction of gluten
* Oats may be ok (small amounts)
What is Non-Celiac Gluten Sensitivity?

- Real or vogue / fact or fad?
- An IBS treatment
- Is it “FODMAP” in disguise?
Directions beyond gluten free

* Vaccine
* Pills to allow gluten (think lactose)