Type 1 Diabetes and other Autoimmune Diseases

- T1DM patients are at an increased risk for additional autoimmune diseases
- Among these, the most common are:
  - Autoimmune thyroid disease
  - Celiac disease

Autoimmune Thyroid Disease

- Most common autoimmune disease in those with T1D
- Up to 50% of individuals with T1D have thyroid autoantibodies.
  - ~50% of those with antibodies develop thyroid disorders within 3 to 4 years
- Includes:
  - Graves’ disease
  - Hashimoto’s thyroiditis
**Hashimoto’s Thyroiditis Symptoms**

- Hypothyroidism
  - Fatigue
  - Weight gain
  - Pale or puffy face
  - Feeling cold
  - Joint and muscle pain
- Constipation
- Dry and thinning hair
- Depression
- Slow heart rate
- Heavy menstrual flow or irregular periods
- Fertility problems

**Hashimoto’s – diagnosis and treatment**

- **Diagnosis**
  - Thyroid function tests (TSH, T4, T3)
  - TPO (thyroid peroxidase antibodies)
- **Treatment**
  - Medication: levothyroxine (Synthroid)

**Grave’s Disease Symptoms**

- Hyperthyroidism
  - Irritability
  - Muscle weakness
  - Sleeping problems
  - Fast heartbeat
  - Poor tolerance of heat
  - Diarrhea
  - Weight loss
- Thickening of the skin on the shins (pretibial myxedema)
- Eye symptoms (25-80%)
  - Bulging
  - Dry eyes
  - Goiter

**Grave’s Disease – diagnosis and treatment**

- **Diagnosis**
  - Thyroid function tests (TSH, T4, T3)
  - Measurement of thyrotropin receptor antibodies
    - (TRAb, also called TSI, TBI, or TBI)
  - Radioactive iodine uptake
  - Ultrasound
- **Treatment**
  - Medication: Methimazole (in adults also Propylthiouracil (PTU))
  - Radioablation
  - Surgery
Celiac Disease

- Associated with other autoimmune diseases (type 1 diabetes, autoimmune thyroid disease)
- Celiac disease can develop at any age, but often presents in childhood
- Affects at least 1% of the general population
- 10% of people with type 1 diabetes will get celiac disease

What is Celiac Disease?

- Autoimmune disease, triggered by gluten that results in injury to the small intestine
- Certain genes (HLA-DR3) increase the risk of celiac disease
- Overall, the risk of celiac disease in a family member is about 10%
- It is recommended that all first-degree relatives get screening for celiac disease

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Classic presentation:
Gastrointestinal Manifestations (aka Gut symptoms)

- Chronic or recurrent diarrhea
- Abdominal distension, pain
- Anorexia
- Failure to thrive or weight loss
- Vomiting, constipation
- Irritability

CELIAC DISEASE IS MORE THAN JUST A GUT PROBLEM

- Skin & mucosa: dermatitis herpetiformis, aphthous stomatitis, hair loss
- Central nervous system: ataxia, seizures, depression
- Carditis, cardiomyopathy
- Celiac disease: villous atrophy, malnutrition, malignancies
- Bone: osteoporosis, fractures, arthritis, dental anomalies
- Hepatitis
- Anemia
- Reproductive: miscarriage, infertility, delayed puberty, SS

"Asymptomatic"
Diagnosis of Celiac Disease

- Screening is done by an autoantibody test in the blood:
  - tissue transglutaminase autoantibody (tTG)
  - very sensitive test to screen for the presence of celiac disease or the likelihood of developing celiac disease

- Diagnosis is confirmed by endoscopy and biopsy of the small intestine

How is Celiac Disease treated?

Celiac disease is treated by avoiding gluten in everything you eat:
- Strict avoidance (no “holidays” from the diet)
- Lifelong treatment
- Requires education by a skilled dietician
- Requires follow-up by your doctor to monitor for response to the diet and for possible long-term complications

Conclusions

- People with T1D have a significant risk of other autoimmune disorders
- Providers should be on the lookout for symptoms
- Regular screening is recommended
- Treatment is available for these conditions and can prevent further complications