51 year old woman with hyperglycemia

August 9, 2012
Katie Stanley, MD
HPI

- Diagnosed with DM 1 year prior to visit
- Established primary care at that time due to notable weight loss after tobacco cessation
- Polyuria and polydipsia x 2 mos prior to dx
- Initial blood sugars in 400s per pt
- Started on metformin by PCP
HPI Continued

- Remained uncontrolled on metformin
- Changed to saxagliptin/metformin 1 month later
  - Increased dose
- Added glipizide 5 mg qam
- DM remains uncontrolled with A1c 13.3%
  - >referral to endo
- Reports BGs 200s-300s, improved from 400s at diagnosis
Review of Systems

- Constitutional:
  - ~25 lb weight loss at diagnosis, no further wt loss, but has not regained;
  - Overall feels better than when first diagnosed

- HENT:
  - Dental infection

- Eyes: Negative.

- Respiratory: Negative.

- Cardiovascular: Negative.

- Gastrointestinal:
  - Negative for N/V, abdominal pain

- Genitourinary:
  - Continued polyuria, nocturia though reports improvement from diagnosis

- Musculoskeletal: Negative.

- Neurological: Negative.

- Hematological: Negative.

- Psychiatric/Behavioral: Negative.
Past Medical History

- Diabetes Mellitus
- Abnormal TSH
  - 4.63 1 month prior to visit
Family History

- **Diabetes**
  - Brother and 2 maternal aunts
  - Brother diagnosed in 40s, overweight
  - Aunts not overweight
  - All on pills, not sure if controlled

- **Lupus**
  - Sister

- **Thyroid disease**
  - Negative
Social History

- Has 2 grown children
- Works in maintenance at Walmart
- Quit smoking 1 year ago
- No alcohol or illicit use
Physical Exam

- HR 78, BP 101/63
- Wt 51.6 kg, Ht 160 cm, BMI 20.2
- Pt reported maximum wt 140 lbs -> BMI 24.8
- General: Well-appearing but thin
- HEENT: MM mildly tacky, nl thyroid without nodules
- Lungs: CTAB
- CV: RRR, no m/r/g
- GI: Soft, NT/ND
- Ext: No edema
- Skin: No acanthosis, no skin tags
Labs

- Na 134, K 4.1, Cl 101, HCO3 22, BUN 14, Cr 0.7, Glu 400, Ca 9.1
- C-peptide 0.27
- TSH 5.77, FT4 0.80, total T4 5.7, T3 75, reverse T3 213, TPO Ab 20480, Tg Ab Negative
- Insulin Abs Negative
- GAD65 Ab 1.07
Course

➤ Started on insulin regimen
  • TDD 0.5 U/kg/day
  • Lantus 12 units, Novolog 4 units qac
    +1:75>200

➤ Return visit 1 week later
  • Checking BG 4x/day: 88-189
  • Energy and overall well-being much improved
  • Gained 5 lbs
  • Decreased urination and thirst
Further Labs

- Lipid panel
  - Total 132, HDL 83, LDL 44, TGs 23

- Adrenal insufficiency?
  - Cortisol 12.0 (7:13 am)
  - ACTH 25.7
  - Adrenal Ab negative
Wrong Call: The Trouble Diagnosing Diabetes

By KATE LINEBAUGH

With cases of diabetes growing each year, many adults are getting caught in a potentially dangerous situation: they are diagnosed with Type 2 diabetes when they actually have Type 1 diabetes, a substantially different condition.
Latent Autoimmune Diabetes of Adulthood (LADA)

Criteria
- Age greater than 30
- Antibody positivity
- Not treated with insulin within 6 months of diagnosis

Epidemiology
- 2-12% of all cases of diabetes
- 3.6% newly diagnoses cases apparent type 2 in UK

Ketosis prone?

Insulin resistant?
Treatment of LADA- Cochrane Review 2011

- **Primary outcomes**
  - Complications: No studies
  - Metabolic control: Meta-analysis showed 1.3% difference in A1c in insulin vs. SU+/-met
  - Progression to insulin dependence: Higher with SU tx

- **Secondary outcomes**
  - C-peptide: Greater decline from baseline in SU vs. insulin, higher C-peptide in insulin + rosiglitazone vs. insulin alone, higher C-peptide at 24 wks in pts treated with GAD65 compared to placebo
  - Health related QOL, health service utilization: no studies
Thyroid autoimmunity is associated with GAD titers

- Study of Chinese subjects with Type 1 DM and LADA
- Antibody positivity
  - 21.5% in LADA subjects (27.4% in DM1)
- Thyroid dysfunction
  - 11.1%->15.3% in LADA subjects
- GAD65 titer
  - GAD65 titer>175 U/mL associated with much higher prevalence of thyroid autoimmunity
- Thyroid autoimmunity associations in LADA
  - Higher prevalence of thyroid dysfunction, lower fasting C-peptide, higher GAD titers
  - Higher frequency HLA-DQA1*03-DQB1*0401
Adrenal antibodies

- Journal of Endocrinology 1999
  - 15 positive -> 6 developed Addison’s disease over 6 months - 10 yrs
  - 51 negative -> 49 persistently negative and adrenal fxn remained nl, 2 became positive, 1 developed adrenal dysfxn

- 21-OH antibodies more predictive than adrenal cortex antibodies

- Children with + adrenal antibodies more likely to develop adrenal dysfunction than adults


