



# Updates on Two Interesting Cases: Case 2

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24y/o F with polyuria, blurred vision,  
and fatigue

- 24 y/o Filipino woman sent by PCP with c/o **polyuria, blurred vision, and fatigue**
- Last PCP visit, **fasting BG 171, HbA1c 7.5%**
- Had not started medication

# Patient History

- PMHx
  - Seasonal allergies
  - GERD
- Meds
  - Loratadine 10mg PO daily
  - Nasonex two sprays each nostril daily
  - Prevacid 30mg PO BID
- Allergies
  - Lactose
  - NKDA
- FamHx
  - **MGM: DM2 in 80's**
  - **F: prediabetes**, asthma, seasonal allergies
  - M: Sjogren's disease, Rheumatoid arthritis, ASD
  - **S: gestational diabetes**
  - B: healthy
- SocHx
  - Single, no children
  - Graduate student in pediatric clinical neuropsychology
  - Denies tobacco, IVDU
  - Occasional EtOH

# Physical Exam

- VS: BP 102/74 mm Hg, HR 68 bpm, Ht 61 in, Wt 57 kg, **BMI 24, office fasting BG 146**
- HEENT: oropharynx without crowding, thyroid normal
- Pulm: CTA bilaterally
- CV: RRR, nl S1, S2, no M/R, pedal pulses palpable, no edema
- Abd: soft, non-tender, non-distended, NABS
- MS: normal muscle strength 5/5 throughout
- Skin: no acanthosis nigricans, no skin tags
- Neuro: Sensation intact in b/l feet

# Laboratory Data

139	104	14
3.9	25	0.6

151

14.3
8.7
40.7

327

Hgb A1c: 7.5%

GAD65 Ab: 0.00 nmol/L

IA2: negative

Insulin Ab: <3% bound

Glucose: 149 mg/dL

C-peptide: 0.7 pmol/mL

Microalbumin: 6.8 mcg/mg

TSH: 2.2 mcU/ml

T4: 7.9 mcg/dL

FTI: 9.2

# Plan

- Sample sent to test for MODY mutations
- Started pt on Januvia 100mg daily due to concern for beta cell dysfunction
- Added Metformin 500mg BID to improve fasting blood glucose

# DNA Testing

- MODY3 mutation found
  - exon 8 E508K mutation in HNF1A gene



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	Genetic Defect	Result
MODY1	HNF-4 $\alpha$	Impairment of glucose-stimulated insulin secretion
MODY2	Glucokinase gene	Reduced activity of glucokinase, decreased insulin secretion
MODY3	HNF-1 $\alpha$	Weak transactivator of the insulin gene, decreased insulin secretion
MODY4	Insulin promotor factor-1	Abnl transcriptional regulation of beta cell development and function
MODY5	HNF-1 $\beta$	Leads to early onset diabetes, kidney cysts
MODY6	NeuroD1	Regulatory switch for endocrine pancreatic development



# Treatment

- No improvement in BG with Januvia and Metformin
- Patient started on Glyburide 5mg BID
  - Titrated to Glyburide 30mg BID, with improved BG control (HbA1c 6.8%)

# Follow Up

- BG uncontrolled, Glyburide 40mg BID, started Lantus 8 units qhs
  - Titrated to Lantus 14units qhs
- A1c 7.4%
  - Started Januvia 100mg daily, decreased Lantus to 8 units qhs
- A1c 7.6 - 8.0%
  - Continued to increase insulin dosing (Lantus 28 units BID)
  - Multiple dietary changes made to avoid mealtime insulin
- Increasing patient frustration as A1c not improving, BG uncontrolled

# Follow Up

- Felt Januvia was not helping, glyburide only medication keeping BG relatively stable
- Changed regimen to:
  - Glyburide 40mg BID
  - Lantus 28 units BID
  - Victoza 0.6mg daily -> titrate to 1.2mg daily
  - Stop Januvia

# Follow Up

- Patient emailed regarding hypoglycemia in the afternoon and evening
- Decreased glyburide to 40mg qPM, 30mg qAM
- Now with improvement in blood glucose without hypoglycemia
- Awaiting A1c at next visit