Why Things Can Go Terribly Wrong in Diabetes

Clinician error
Patient ignorance or lack of health care literacy
Patient non-compliance or non-adherence

Why Things Go Wrong

A health care system focused on treatment of acute disease more than management of chronic disease
Maintaining metabolic control is a fine and difficult balancing act requiring collaboration between pts, family members and HCPs

It’s a little late….

- Up to 60% of pancreatic beta cells are non-functional AT Dx of T2DM
  Diabetologia 2001;44:929–945

- Estimated duration of T2DM AT Dx is a mean of 6.2 YEARS!
  Diabetes Care. 2014 Jun;37(6):1668-74

- 1 in 5 patients with newly Dx T2DM has DR/DME! (3% have CSME) and both entities are associated with increased CV mortality
  Circ Cardiovasc Qual Outcomes. 2015 May;8(3):280-7

Common Patient Statements

- “I have the good kind of diabetes”
- “My diabetes is diet controlled”
- “I don’t have to check my blood sugar because I can tell when it’s high by the way I feel”
- “My A1c test is 120”
- “I see fine so I am sure diabetes hasn’t damaged my eyes”
- “I take lots of medicines – but none of them affect my eyes”
When Should I Refer a Diabetes Patient?

• It depends on your comfort level

  – My Answer:
    – When the patient needs treatment of DR/DME
    – When the patient has chronic, sub-optimal metabolic control or is receiving decidedly sub-optimal care
    – With unexplained VA loss
    – When I am unsure of the diagnosis

Retinopathy Lesions

- Microaneurysms (MA)
- Dot & Blot Hemorrhages
- Hard Exudates
- Retinal Thickening
- Cotton Wool Spots
- Vein Beading
- Intra-retinal Microvascular Abnormalities (IRMA)
- Neovascularization (of disk, retina or iris/angle)

Which of these cause severe vision loss

Sight-threatening DR

- PDR
- DME

Who Needs Immediate Referral?

- neovascularization of the optic disk (NVD) and vitreous hemorrhage or retinal detachment should be referred to a retinal specialist within 24-48 hours

When to Worry About NPDR

- When there is associated DME
- When it qualifies as Severe NPDR
  - IRMA
  - 15% to PDR in 1 yr
  - 45% to PDR if 2 severe findings

Per ETDRS

AOA Clinical Practice Guidelines for Care of Patients with Diabetes Mellitus, 2014
A Few Good Cases.....

Patient CK
- 27 yo male with T1DM x 16 years
- "I lost my vision in the right eye 3 months ago and now my left eye is a red fog – I got 'lasered' at Harborview yesterday"
- CK has had no eye exam in 2 years ("my last eye doctor said I had some early damage")
- "My last A1c was bad – above 8"
- CK takes 18-30 units Humulin R with meals and 50 units Humulin N BID (154 – 190 units)
- 5'7”/204 lbs
  - BMI = 31.5 kg/m²
Here are his fundus photos...

Hemoglobin A1c..relevance to OD’s

A1c is a “Quality of Life” Number

- control and prevention of complications
- 2/3 of patients are unaware of their last A1c result
- In office testing
  - www.A1cnow.com
  - POC A1c more powerful


Metabolic Control in US Diabetes Patients

- 47.5% have A1c > 7% &
- 30% have A1c > 8%

- Per AACE guidelines, half of patients with T2DM are on inappropriate meds


- Up to 70% of patients with diabetes have blood pressure levels above target

J Gen Intern Med. 2008 May;23(5):588-94

CK - Diagnosis

- vitreous hemorrhage s/p PRP OS only
- Significant fibrovascular traction OD
- Uncontrolled T1DM
- What Else Is Wrong?
  - Untreated HTN
  - Obesity
  - IR with Hyperinsulinemia
  - (insulin ↑IGF-1/VEGF, BP, cancer risk)

Metabolic Syndrome has up to 43% prevalence in T1DM
CK - Treatment

• Patient education
• Refer to a retinal specialist
  – PRP, Vitrectomy
• Call PCP – recommend referral to endocrinology – f/u with letter & images
• Refer to an endocrinologist
  – Started on Novolog + Lantus, ACEI
  – Diabetes self-management education class

CK - Outcome

• Vitrectomy with endolaser OD, more PRP OS (resulted in 20/60 OD and 20/20 OS)
• Now on insulin pump with CGMS
  – Last A1c = 7.5% and BP = 118/75
  – Stable DKD
  – Cardiology consult normal

CK – Outcome in 2014

20/60  20/20

CK in 2018

• Detachment, right eye → more surgery
• Latest HbA1c = 7.2%
• Now 20/800 OD
• 20/20 OS
• Would anti-VEGF therapy have helped?

Question

•

• DCRR.net Protocol S showed anti-VEGF (Lucentis) is non-inferior to PRP
  – Less DME & better visual field with Lucentis
• Decision should be individualized
  – Pros & Cons

DRCR.net Protocol S

VA improved by 2.8 letters
baseline in the ranibizumab (Lucentis) group vs.
improvement of 0.2 letters from baseline in the PRP group
• There was more peripheral VF loss and more vitrectomy’s in the PRP group vs. Lucentis
  – VF Loss: 213 dB in the ranibizumab group vs. 531 dB in the PRP group
  – PPV: 15% with PRP vs. 4% with Lucentis
• When DME present, Lucentis was superior for VA and OCT improvement

JAMA. 2015;314(20):2137-2146. doi: 10.1001/jama.2015.15217 (Published). Clarity Trial Eylea
Earlier Anti-VEGF Tx lowers the risk of PDR and Vision Loss in DME

RISE/RIDE: Risk of PDR Outcomes in Sham vs Ranibizumab Groups

Time to First Progression to PDR Outcome

3 fold higher risk in sham group

AND

Moderately Severe to Severe NPDR without DME

Anti-VEGF Treatment (Aflibercept) for Prevention of Vision Threatening Diabetic Retinopathy (PDR/CI-DME) in Severe NPDR (DRCR.net Protocol W)

Primary (Short-term) Objective

To determine safety and efficacy of prompt anti-VEGF versus observation in eyes presenting with severe NPDR and no CI-DME for prevention of vision threatening outcomes

Patient CK

- How to we protect the fellow eye?
- Improve/Maintain good metabolic control
- Early anti-VEGF if any sign of recurrent STR
- Protective eye wear

Patient RC: Short & Sweet

- 21 yo male with T1DM x 12 years
- Recent HbA1c = 7% but pt reports had been as high as 13% for ‘many years’
- Saw OMD 14 months earlier and was told he had “some early changes” but could be seen Q2 years if he kept his A1c in range
- Complaining of reduced vision in the right eye for a few days
- 20/400 and 20/20 NI with pinhole
Patient RC
- Referred to retinal specialty
- Consult letter reports PRP and Avastin delivered at initial visit
- This patient represents a strong argument AGAINST less frequent eye examination intervals for higher risk patients
  - Young males
  - T1DM
  - Hx of initial poor control (metabolic memory)
  - Diabetes duration > 10 years

Patient – DKS
- 52 yo obese female with T2DM x 5 years
- ‘My vision has been fuzzy for several months’
- BCVA 20/100 OD and 20/80 OS
- Last A1c = 7.8% (mean glucose = 190 mg/dl)
- Meds: metformin, HCTZ, simvastatin, ASA

Patient – DKS
- BP = 142/90
- In-office BS = 203 mg/dl
- Husband says DKS frequently stops breathing HS

DKS – Dx & Tx
- Center-involved DME (also CSME per ETDRS)
- Moderate NPDR • Suspicious for OSAS
- PLAN
  - Refer to retinal for anti-VEGF TX + (aflibercept?)
  - Recommend sleep study to patient and PCP
  - Recommend A1c < 7% and BP < 140/90
  - Recommend ACEI and/or ARB +/- HCTZ
  - Recommend adding GLP-1 analog or SGLT2
  - Discuss PPOD providers (+ foot pain when asked)

Which anti-VEGF is Best?

- Baseline VA
- Prior treatment
- Cost

“IT Depends”

-Socrates
Protocol T - Published Results

- Aflibercept yielded 5-7 additional ETDRS letters compared to bevacizumab & ranibizumab when baseline VA was 20/50 or worse
- Fewer pts needed rescue laser
- Fewer adverse events in all 3 groups
- No difference for serious events, hospitalization or death
- Still only 1-year data


Protocol T Update

- No significant difference between Eylea and Lucentis at 2 yrs irrespective of baseline VA (+2 ETDRS letters with aflibercept)
- Eylea was superior to Avastin (+ 5 letters)
- Eylea patients were 20% less likely to need rescue laser
- Lucentis patients were 2X more likely to have an APTC event

Ophthalmology Feb 27, 2016

Mean Change in Visual Acuity Over 2 Years

Baseline Visual Acuity 20/50 or Worse

- 20/50 of Cohort
- P-values adjusted for baseline visual acuity and multiple comparisons

104-Week Treatment Group Comparison:
- Aflibercept vs. Bevacizumab: +0.02
- Aflibercept vs. Ranibizumab: +0.18
- Ranibizumab vs. Bevacizumab: +0.18

Newer T2DM Meds to Know

- GLP-1 Analogs (end in -tide)
  - Byetta/Bydureon, Victoza/Saxenda, Trulicity, Tanzeum, Ozempic FDA approved - all injected
  - Preprandial insulin, glucagon & appetite
  - 10-20 lbs weight loss
  - Lower A1c about 1 point

- SGLT2 Inhibitors (end in -flozin)
  - Invokana, Farxiga, Jardiance - all are oral
  - Block renal resorption of glucose
  - 9-12 lbs weight loss
  - Drop A1c about 0.8

Reduce CV Risk

Patient DKS - Outcome

- Avastin x 4; Lucentis x 4; Eylea x 2; IVTA x 2; focal laser x 3
- CRT decreased, BCVA now 20/25 OD and 20/50 OS
- Sleep Study: OSAS confirmed and CPAP Rxed
- Started Victoza (liraglutide): 15 lbs weight loss
- Started lisinopril/HCTZ
- A1c dropped to 6.9%

Would Earlier Intervention Have Helped?
Importance of Early Treatment

![Graph showing change in BCVA from baseline](image)

- With crossover from laser to 1 year of 0.5 mg ranibizumab therapy at third year, original sham (laser) treatment group’s visual gains were lower than those seen in first year of ranibizumab-treated groups (2.8 vs 10.6 and 11.1 leiers).
- Delayed treatment reduced magnitude of VA benefits of anti-VEGF therapy.


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Patient SB

- 33 yo female with T1DM x 19 years
- Concomitant PCOS
- Trying to get pregnant
  - IUI has failed 3X and considering IVF
- Insulin pump with continuous glucose monitor plus metformin & letrozole
- Last HbA1c = 6.2%
- Mild NPDR but new hard exudate near the fovea...

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**What Do You Recommend For SB?**

- Anti-VEGF contraindicated in pregnancy
- Can’t do focal laser near the fovea
- We discussed increased risk of worsening DME with pregnancy
- I asked 3 retina specialists
  - Monitor in 10-12 weeks; see sooner if pregnancy occurs
  - Monitor in 8 weeks; get a widefield FA and consider focal laser for areas of peripheral non-perfusion

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**Patient JQ**

- T2DM x 8 years
- A1c 6% on insulin (Novolog + Lantus)
- Asymmetric NPDR without DME
- Emmetropia *IOP 17/17 mmHg
- Review of medical record shows A1c 11.3% at diagnosis and not reduced < 8% until year 5 when PCP referred to endocrinology
Asymmetric NPDR

- Associated with carotid artery stenosis both ipsilateral and contralateral to the eye with worse DR
  Ophthalmology 1990; 97(7):869-74
- Eyes with lower IOP may have increased risk of sight-threatening DR due to increased blood flow in compromised retinal capillary bed
  Br J Oubl Vasc Dis 2001; 1(1):80-87
- Protection also associated with prior chorioretinal scarring and high myopia

No bruit was detected........But

- Referred for carotid ultrasound
- 90% stenosis of the left common carotid artery

For Patients with Asymmetric DR

- In the absence of HIGH IOP, high myopia and/or chorioretinal scarring in the eye with less severe DR...
  - Carotid artery stenosis
  - Venous Stasis Retinopathy or Ocular Ischemic Syndrome

What Else?

- Eyes with predominantly peripheral DR lesions (PPL) were
  - 3.2 X more likely to have a 2-step ETDRS severity progression  n = 200 eyes
  - 4.7 X more likely to develop PDR  p = 0.005
- PPL are associated with non-perfusion on ultrawide field fluorescein angiography
  Ophthalmology. 2015 Feb 19.
GN - Simple Stuff that Matters

- 68 yo man with T2DM x 15 years
- 250 units of insulin daily (Levemir + Humalog)
- A1c has not been below 8% since starting insulin
- Patient and his endocrinologist are frustrated with each other
- Fasting glucose is never > 150 (log book) BUT
- 2-4 hour post-prandial glucose always > 200

The Glucose Log Book

- Numbers 110-150 mg/dl
- Post-prandial numbers 250-350 mg/dl

A Simple Question

- When are you taking your Novolog insulin?

Answer:

- “About an hour after I eat.......Why? Is that important?”

Outcome

- HbA1c dropped from 8.7% to 6.9% within 3 months
- Insulin dosage reduced from 250 to 150 units
- Diabetic retinopathy stable x 8 years

Patient LS & the Obstinate PCP

- 70 yo obese female with T2DM x 16 years; two previous MI
- Meds include glipizide, lisinopril, atorvastatin (D/C metformin due to GI distress)
- Last A1c = 10.2%
- BCVA is 20/50 with 3+ PSC OD/OS
- Mild NPDR without DME on clinical exam/OCT
- Patient counseled about A1c and risk of DR progression; referred for Cat Sx
- Report sent to PCP......
“As You Know…”

- Elevated A1c is a risk factor for both cataract formation and future progression of diabetic retinopathy; I have asked LS to work with you to achieve optimal individualized metabolic control (A1c < 8%) & follow-up with me for repeat dilated exam in 6 months.
- Recent evidence suggests that MI size may be larger in patients on sulfonylurea medications, and I have asked LS to consult you about substituting alternative therapies, particularly metformin-XR to reduce GI distress, and possibly a GLP-1 or SGLT2 drug.

How High Is Too High?

- Though ACCORD showed increased risk of death in hi-risk T2DM pts attempting to achieve A1c < 6.5%
  

- Each 1 point increase in A1c increases CV event risk (MI, CVA, CV Death) by 17% in overweight T2DM patients!
  

- Lower A1c definitely decreases risk of severe eye disease.

Goodbye SFUs?

- Many endocrinologists argue that sulfonylureas should no longer be used for pts < 70 yo.
- Patients using SFUs had significantly larger myocardial infarct after STEMI (ST-elevated Myocardial Infarct), which account for 70% of all MI.
  
  & STEMI over 5 yrs.

  Int J Cardiol. 2015 Sep 1;202: 126-130.

6 months Later……

- ECCE resulted in 20/20 VA.
- A1c = 9.5%, still on glipizide monotherapy; her DR is slightly worse.
- “My PCP said that metformin upset my stomach and that Victoza is too expensive. He told me not to worry about my A1c at my age unless it is above 10%”

Two Options

- Try again to educate the PCP, citing the evidence and telling him that I need his help to prevent our patient from losing vision.
- Refer LS to an endocrinologist.
- Third Option: Do Both.

LS Outcome

- Referred to endocrinology/cardiology.
- Started on insulin (Levemir + Humalog), metformin XR, and lisinopril-HCTZ.
  
  - No reported GI upset.
  
  - A1c reduced to 7.5%.
  
  - 10 lb weight gain
  
  - weight reduced 13 lbs.
  
  Farxiga®
When Should Patients See an Endo?

- Sub-optimal glycemic control with progressive DR despite current therapy
- Children with newly Dx T1DM
- Patients with frequent, unexplained hypoglycemia
- Any patient < 60 years of age put on a sulfonylurea as first-line therapy for T2DM

Patient - TG

- 9 yrs T2DM; A1c = 7.1%
- Metformin, losartan, atorvastatin, 81 mg ASA
- HTN (128/78 in-office) + CHF, OSAS (reports always wears CPAP)
- Mild-Moderate NPDR OU with hard exudate distant from the fovea OS only
- 20/20 each eye but reports difficulty driving at night; PCIOL OU w clear capsules/corneas
- OCT shows no current retinal thickening
- MPOD = 0.12 by HFP and 20/40 letter contrast is 25%; Tritan color defects in each eye

Management?

- metabolic control
- What ELSE can be done to help?

Add a -flozin Drug (SGLT2-I)

- EMPA-REG Outcome Trial (EASD 2015)
- Empagliflozin treatment added to usual care reduced risk of CV death by 38% in high-risk T2DM
  - CHF
  - 32% reduction in all-cause mortality
  - n = 7020 patients

N Engl J Med. 2015 Sep 17. [Epub ahead of print]
Fenofibrate – results of FIELD & ACCORD-Eye

- Approved first-line therapy for NPDR in Australian adults with T2DM
- NNT = 14 for prevention of CSME/PDR
- Decreases total macular volume in DME
- Reduces CV events 30% in women and 13% in men

Diabetologia 2014

Add the DiVFuSS Formula

Available as EyePromise DVS formula

- Low MPOD
- Reduced contrast sensitivity
- Acquired color vision defects

MPOD

- and lower still in patients with increasing severity of diabetic retinopathy


Patient TG — serial retinal images OS

Baseline          6 mos on DiVFuSS Formula

Patient - ML

- 18 yo with T1DM x 6 yrs in with her parents, who are very concerned
- HbA1c = 9.2% on insulin pump
  - A1c always < 7% under care of pediatric endocrinologist
  - Plays collegiate volleyball
- No DR or DME
ML gets hypoglycemic in the exam room (random glucose = 47)

“I feel lousy when my blood sugar is < 150, and I can’t afford to get low in class or on the court”

Mom & Dad are worried – ML dislikes their ‘over-protective’ instincts

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**Hypoglycemia**

- in the office (juice, sugared soda, glucose gel)

15gm CHO will ↑BG ~ 30-40 mg/dl (1.7-2.2 mmol/L)

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**Symptoms of Acute Hypoglycemia**

- Perspiration (diaphoresis)
- Confusion
- Tremor

**Who Gets:**

- Patients on insulin
- Or
- Sulfonylureas (Glipizide, Glyburide, Glimepride)

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**A Reality Check**

Hypoglycemia is disabling & can quickly incapacitate (even kill) patients

Many patients opt for chronic hyperglycemia because it has far less impact on function, and the consequences are distant in time

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**Empathy**

- I tell ML understand how difficult it is to get and maintain good diabetes control
- I share with her that my own parents were totally over-protective and drove me nuts as a kid growing up with diabetes
- I tell her that she and I are both lucky because our parents really love us

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**Treatment Plan**

- Patient education about HbA1c and risk of retinopathy during exam & while she dilates – demonstrated DR risk calculator www.RetinaRisk.com
- We looked at retinal images depicting normal eyes and those with DR
- Recommend CGMS & 4g glucose tabs
If the patient can reduce her HbA1c to the AACE target of 6.5%, her 10 year risk of developing sight-threatening retinopathy drops to 5%, or by 49%.

Parents advised that Emily’s preference for hyperglycemia is b/c her glucose thermostat is set too high – will ‘reset thermostat’ if we gradually lower A1c

Discuss carb intake, demonstrate CGMS

Discuss the Joslin “Gold Medalist” Study, metabolic memory & DiV FaSS formula

Letter to Endo and family

**Gold Medalists**

- Time may not always be the enemy...
- "Medalists": h/o T1DM x 50+yrs
- 42.6% did not have PDR, and those without had little progression of DR after first 18 yrs
  - With little to no correspondence to A1c

"This population may be enriched for protective factors....."

Diabetes Care. 2011 Apr;34(4):968-74

**ML 6 Mos Later**

- still no DR
- Wearing DexCom G4 Platinum and she reports much better confidence dealing with low blood sugars
- ML tells me she wants to be an optometrist

**Should ODs Concern Ourselves With Diabetes Prevention?**

- We are largely a primary care profession
- ODs are frequently an entry point into the health care system
- Diabetes is epidemic and will bankrupt the US health care system
- Ocular findings are not uncommon in undiagnosed type 2 diabetes

![Late Diagnosis of Type 2 Diabetes Prevalence of Retinopathy](chart.png)

Patient GM – At Risk

- 58 yo male with recently Dx pre-diabetes
- A1c = 6.3%  Fasting glucose = 118 mg/l
- ‘My PCP recommended more exercise and weight loss’
- Meds include atenolol, HCTZ, d/c lisinopril (‘made me cough’), ranitidine
- BMI = 36 kg/m²  Waist Circumference = 42”
- Smokes 1 pack/day
- Eats 1 serving of fruits/vegetables/day
- Mom developed T2DM in her 70s

Why Should ODs Care About Diabetes Prevention?

- Every day, 55 Americans with diabetes go blind
- You won’t go blind from diabetes if you don’t develop diabetes

My Advice To GM

- Eat a Mediterranean or Paleolithic diet with 30 grams of fiber per day – eat more veggies – consider fasting 2-3 days each week
- Eliminate all sugar sweetened beverages and take a multi-species probiotic supplement
- Buy a pedometer and walk 30 minutes each day or do interval training or consider surgery
- Quit smoking (50% increased risk per US Surgeon General Report, 2014)
- Ask your PCP to take you off HCTZ and switch you to an ARB or alternative ACEI

What Are GM’s Risk Factors for T2DM?

Prevention Beats Cure

Why Fast?

- T2DM is a PROGRESSIVE Disease
- Medical-Nutrition Therapy (MNT) including drugs/dieting/exercise RARELY results in disease remission
- Remission DOES occur after bariatric surgery or with fasting + reduced carbohydrate diet

Indian J Endocrinol Metab. 2012 Jul-Aug;16(4):552-7
Practical Strategies to Avoid Chronic Sugar Toxicity

- Keep carbohydrate content of meals ≤ 30 g
- Keep daily added sugars ≤ 25 g
- Substitute whole plant foods & lean protein for processed carbs, packaged foods, sodas
- Avoid cooking foods at high temperature and low humidity, use leaner meats
  - Heterocyclic amines & polycyclic aromatic hydrocarbons
  - Acrylamide
  - AGEs

My Plan For GM

- Send a note to his PCP
- Copy the patient on the note
- Give him my handout titled “Practical Tips to Avoid Diabetes”
- Give him a card for a local smoking cessation program
- Have GM write down my recommendations and pick 1 or 2 things he wants to fix before his next eye exam – circle those and enter in record

GM Outcome

- 55 lb weight loss using alternate daily fasting
- Walking 10K steps each day
- Last A1c = 5.0%
- Taken off HCTZ and now using low dose ARB (valsartan)
- Discontinued smoking
- MPOD increased from 0.28 to 0.60
- GM is now referring “every person I know” to my office

Patient DG

- 62 yo male complaining of extremely blurry vision x 3 weeks
- Entering VA is 20/200 OD/OS
- -3.00 D myopic shift and corrects to 20/15
- Patient notes excessive thirst when specifically asked, as well as weight loss over the Holidays despite increased food intake
- Prior history of treated prostate cancer and recent prostate specific antigen (PSA) score = 0; all other labs normal

Medical & Social Hx

- Hypothyroidism: levothyroxine is the only medicine
- Non-smoker
- Occupation: financial planner
- Brother has T2DM and had an ischemic BRVO 5 years earlier

DG stats

- Height: 6’ 1”
- Weight: 160 lbs
- BMI: 21.11
- Waist Circumference: 30 inches
- In-office blood glucose = 515 mg/dl
**Question**

- What is the single most important test that this patient should have done?

- Why?

- I performed in-office HbA1c: 12.7%
  → 318 mg/dl mean glucose

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**Visit to Internist**

- I called the patient’s internal medicine physician and recommended a specific diagnostic & treatment regimen

- DG was started on Lantus insulin by the internist – on this treatment:
  - Fasting glucose < 200
  - Post-prandial glucose > 400

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**C-peptide**

- 1.0 ng/ml
- Normal range = 0.5 to 2.0

- T1DM mean C-peptide = 0.6 at Dx
- T2DM mean C-peptide = 5.0 at Dx
- Mean C-peptide in LADA = 1.1

- What test MUST be done on DG now to rule out secondary DM due to toxicity or pancreatic neoplasm?

  Diabet Med. 2013 Jul;30(7):803-17

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**GADA**

GLUTAMIC ACID DECARBOXYLASE ANTIBODIES

Hallmark auto-antibody associated with auto-immune diabetes
DG Outcome

• Antibody testing was POSITIVE
  – 1750 U/ml (normal is < 5.0)

• This patient has autoimmune diabetes (LADA) and has been placed on basal/bolus insulin therapy
  – HbA1c 3 months after initiation = 7.2%

PEARL: 4-12% of diagnosed T2DM is T1DM/LADA
42% of T1DM is Dx AFTER Age 30 years

Patient LH

• 50 yo male with T2DM x 20 years
• Last HbA1c = 8.2% on insulin (Lantus) and liraglutide (Victoza)
• Reduced VA OD x 9 months
• Had multiple anti-VEGF injections last year OD only
• Was told no more injections were needed
• He wants to know why his vision is decreased

This case & images courtesy of Steven G. Ferrucci, OD, FAAO
Chief of Optometry, Sepulveda VA Medical Center

Just One More...

• The Benefits of Technology

Question

• What is a probable reason for his vision loss OD?
  a. non-optimal refraction
  b. recurrent CI-DME
  c. cataract formation
  e. dry eye disease
d. any/all of the above are reasonably probable
3 x 3 mm OCTA of left macula

3 x 3 mm OCTA of right macula

Superficial capillary plexus OD

Deep capillary plexus OD

LH Impression

- Moderate NPDR OU
- No center involved DME OD
- Macular ischemia OD>>OS on OCTA
- No need to do FA
- No treatment available
- Optimize acuity
- Rx safety eye wear
- Optimize BP/BS control
- RTC 3 mos. Repeat OCT/ OCTA

KEY POINTS:
1. WITHOUT OCT-A OR FA WOULD NOT BE ABLE TO DIAGNOSE ISCHEMIA
2. WITH OCT-A ABLE TO AVOID INVASIVE FA AND ABLE TO DO IN MOST ODs OFFICES

My Experience

- Scare tactics generally don’t work, if at all, until patients have lost something
- Scare tactics and threats aren’t conducive to good relationships
- Building a relationship works
Getting Patients To Buy In

- Use humor
- Tell patients about your personal or family experiences with diabetes
- Criticize behaviors, not the person
- Use patient Handouts & Digital Imaging
- Conference with the patient & family

- As a last resort for men, the risk of impotence can be a very strong motivator

Patient Perceptions

- Diabetes patients are frequently unaware of:
  - The need for regular eye examinations
  - The recommended frequency of dilated eye examinations
  - The asymptomatic nature of DR/DME at their earliest, most treatable stages


My Soap Box

Those Who Aren’t What We Call Them

Don’t Substitute a Part Of Any Person
For the Whole Person

Thank You!

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