Retina SIG: Diabetes Symposium: A Comprehensive Team Approach

Moderator: Steven Ferrucci, OD, FAAO

Diabetes in a multifactorial disease that affects all aspects of our patients health, reaching well beyond the eye. A multidisciplinary faculty panel consisting of specialists in endocrinology, retina, and optometry will provide a practical and interactive educational program focusing on diabetes.

Interdisciplinary Care of Patients with Diabetes Mellitus: An Optometric Perspective

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Optometric Representative to the National Diabetes Education Program (NDEP), US National Institutes of Health (NIH)
T1DM x 47 years

I. Why ODs should be on the diabetes care team
   a. 85% of all eye exams are performed by optometrists
      - ODs also perform the majority of eye examinations on patients with and at-risk for diabetes
   b. 40,000 US optometrists versus 18,000 ophthalmologists versus 1500 retinal specialists
   c. 29.1 million Americans have diabetes & 86 million have pre-diabetes (2014)
   d. Patients are better served when all health care providers give complementary (and complimentary) messages

II. Gaps in ophthalmic care of diabetes patients
   a. roughly 60% report receiving a dilated eye exam within 12 months
   b. 25-50% of ‘high-risk patients’ are not getting annual DFE (pre-existing DR, poor metabolic control, disease duration > 10 years, renal/CVV disease)
   c. 20% of newly diagnosed T2DM patients have some degree of DR
   d. 2-3% of newly Dx T2DM patients have CSME at diagnosis

III. Conundrums in Optometric Care of Diabetes
   a. Does this particular patient need to be referred to ophthalmology?
   b. Does this patient need to be referred to endocrinology?
   c. Would this patient benefit from referral to other members of the diabetes care team? (dentist, podiatrist, pharmacist, diabetes educator, mental health professional)
   d. Profiles in patient ignorance: “My A1c is ‘good’”; “I’ve got a touch of diabetes”; “I have the good kind of diabetes”

IV. Gaps in Communication
   a. What are my patients’s individualized metabolic goals? (HbA1c, BP, lipids)
   b. What are my patient’s most recent laboratory values?
   c. Are the OD, retinal specialist, PCP and/or endocrinologist delivering mutually reinforcing & consistent messages?
   d. The Power of Reciprocity - We must ALL communicate reciprocally
e. Patient JG: T1DM x 49 years, mild NPDR and sub-clinical DME revealed by OCT, HbA1c is currently 6% & has never been > 7%: referred to a retinal specialist who tells her “you need to get better blood sugar control” – patient in my office in tears

V. Better Patient Communication
   a. Use handouts, retinal imaging and kindness to educate
   b. Use fear as a last resort for patients who are at serious risk of imminent vision loss
   c. Lose the word ‘diabetic’ (epileptic, albino, macular degenerate) - Most patients do not want to be identified AS their diagnoses because it is existentially diminutive

Interdisciplinary Care of Patients with Diabetes Mellitus: A Retinal Specialist’s Perspective
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I. Retinal manifestations of Diabetes
   a. Leading cause of blindness in US ages 20-74
   b. Prevalence of Dr
      i. > 40 years of age with DM: 28.5%
      ii. Type 1DM 20-30 yrs: 95%
      iii. Type 2 > 16 yrs: 60%
   c. Risk factors for Dr

II. VEGF, Factor X and Role in DR
   a. Theroy
      i. VEGF in PDR
      ii. VEGF correlated to severity of retinopathy and retinal thickness
      iii. VEGF binds receptors and results in leakage and angiogenesis
   b. How does ischemia occur on diabetic retinopathy?
   c. Does VEGF increase with high glucose and advanced glycation endproducts?
   d. Does VEGF increase with increased exogenous insulin?
   e. Does PRP reduce VEGf production?

III. Diabetic macular Edema Treatment
   a. DME stats
      i. Most common cause of moderate vision loss in DM pts
      ii. Prevalence and unmet need
   b. Macular laser Photocoagulation
      i. Traditional Treatment
      ii. Pros and cons
   c. Steroid treatment Development
      i. Dexamethasone insert
      ii. MEAD study
   d. VEGF Injections:
      i. RIDE and RISE (Lucentis)
      ii. VISTA/VIVID (Eylea)
   e. Which is better VEGF protocol?
   f. DME: Current treatment landscape
      i. Role of laser
Interdisciplinary Care of Patients with Diabetes Mellitus: An Endocrinologist Perspective

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Outline:
I. Diabetes is a burdensome public health and societal issue
   a. 29.1 million Americans have diabetes
   b. 8 million Americans have Diabetic Retinopathy
   c. Financial Burden of Diabetes: In 2012 the total estimated cost of (diagnosed) diabetes was $245 billion; this was a 41% increase from previous estimate of $174 billion in 2007.
II. The impact of Diabetes on the Eye & Vision
   a. Diabetes is the leading cause of blindness in the United States
   b. 90% of blindness caused by diabetic retinopathy can be prevented with early detection and timely treatment.
III. Role of Glycemic Control in Eye Disease
   a. DCCT demonstrated
      i. Intensive therapy aimed at achieving glycemic control as close to non-diabetic range as safely possible reduced the development and progression of all diabetes specific complications
      ii. Intensive therapy is most effective when implemented early in the course of diabetes; if intensive intervention is delayed, the momentum of complications is harder to slow
      iii. Metabolic memory, persistent prolonged benefit of intensive therapy was seen up to 10 years after the study ended
   b. UKPDS established:
      i. Retinopathy is benefited by lowering blood glucose levels in type 2 diabetes with intensive therapy, which achieved a median HbA1c of 7.0%
      ii. Hyperglycemia is a major contributor of diabetes related complications
      iii. A continuous relationship between the risk of microvascular complications & glycemia, for every percentage point decrease in HbA1c (e.g. 9 to 8), there was a 35% reduction in the risk of complications.
   c. A1c goals should be individualized for each patient based on age, comorbidities, frequent & sever hypoglycemia to name a few considerations
d. Less blood glucose fluctuation acutely & A1c variability chronically lowers the risk of diabetic retinopathy

IV. Role of Blood Pressure & Lipid Management in Diabetic Eye Disease (ABCs of Diabetes Management)
   a. Control of A1c though important, is not solely important in the prevention of diabetic eye disease
   b. Attaining goal blood pressure and lipid levels may actually be more important than blood glucose and A1c control alone
   c. Better blood pressure control cut the risk of severe vision loss by 50%.

V. Need for Coordinated approach to patient care
   a. Patients respond positively to a coordinated approach by all providers involved in their diabetes care (PCP, Endocrinologist, Retina Specialists, Optometrist, Nephrologist, Podiatrists, etc).
   b. It is very important, all providers should be on the same page, in regards to each individuals glycemic goals – A1c & daily blood glucose
   c. PCPs and Endocrinologist are largely relying on the patients’ word regarding if a diabetic eye exam was performed within the past year.
   d. Patients often equate visual acuity check as a diabetic eye exam.

VI. How to achieve coordinated inter-provider communication
   a. Avoid abbreviations in clinical reports, don’t assume non-eye providers remember them
   b. Ask the patient who their primary care provider & endocrinologist are so you can provide results reports.
   c. Request to be included in fax list from PCP or endocrinologist when patient is seen for Diabetes Management.
   d. Feel comfortable to pick up the phone and call other providers to discuss any concerns about a particular person’s management or to better understand limitations in the individual’s care.