Diabetes Update 2016:
What's New in an Old Disease: PBL

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The content of my material/presentation in this CME activity will include discussion of unapproved or investigational uses of products or devices as indicated: Metformin: It's use for prevention of progression of prediabetes to overt diabetes will be discussed.

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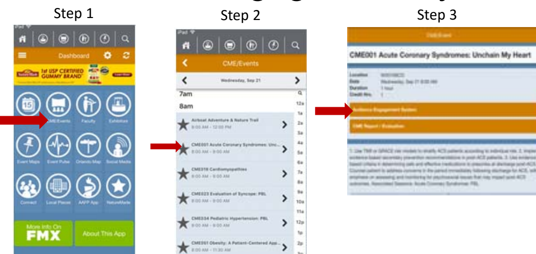
Dr. Ziemkowski is a graduate of the University of Illinois College of Medicine at Chicago. He completed his residency in family medicine at Michigan State University, Kalamazoo Center for Medical Studies, Kalamazoo, MI, and an internship in emergency medicine at the University of Michigan, Ann Arbor, and St. Joseph Hospital. Dr. Ziemkowski practices family medicine in southwest Michigan, where he is on the faculty of the Western Michigan University Homer Stryker, MD, School of Medicine's Family Medicine Residency Program and serves as associate dean for Student Affairs. He has been teaching for 19 years and maintains a blog for residents at kzoofm.blogspot.com, and looks to use technology to help educate patients on healthy lifestyles. Dr. Ziemkowski's clinical interests include the care of metabolic conditions associated with cardiovascular risk, such as hypertension, hyperlipidemia, diabetes mellitus, and obesity. He believes that primary prevention of these diseases and their complications will deliver the greatest benefit to the greatest number of patients.

Learning Objectives

1. Practice applying new knowledge and competencies gained from diabetes update sessions, and receive feedback from expert faculty.
2. Interact collaboratively with peers to solve complex and challenging case-study scenarios.
3. Develop problem-solving skills that promote effective reasoning to manage diabetes within the context of professional practice.

Audience Engagement System



Case 1

Chief Complaint

- 40 y/o African-American male presents for a follow-up visit for his hypertension.

History of Present Illness

- He has not been seen in clinic in 14 months. He didn't think he needed to be seen but the office refused to refill his prescription after one year unless he made an appointment.

Past Medical History

- Diagnosed with Hypertension 3 years ago.

Medications, Allergies

- Lisinopril 40 mg daily.

Family History

- Diabetes in Maternal grandmother who was obese.

Social History

- Smokes 1 ppd (23 pack year history)
- Sedentary lifestyle.

FMX

Review of Systems

- No headache, chest pain, dyspnea.
- Denies frequent urination, increased thirst or blurred vision.

FMX

Physical Examination

- Temp 97.4, HR 88, Resp 16, BP 138/92
- Wt.: 180 lbs., Ht.: 5 ft. 7 in.

- Gen: overweight appearing male, approximate age, NAD
- Eyes: PERRLA, EOMI, fundi w/o vascular changes
- CV: RRR without murmur, no S3/S4
- Lungs: mildly prolonged expiration, scant end-expiratory wheeze, no rhonchi, no rales
- GI: Bowel sounds positive, nontender, no masses, no organomegally
- Skin: no rashes noted.

FMX

- Question #1: Would you consider screening for Prediabetes or Diabetes in this patient?

FMX

- Question #2: What would be the most appropriate test to use for screening in this patient.

FMX

Laboratory/Radiology

- Clinic (fingerstick) HbA1c = 6.7%

FMX

- Question #3: Does this A1C result of 6.7% confirm the diagnosis of Diabetes in this patient?

Assessment

- The physician decides to follow this test with a fasting plasma glucose as part of his decision making process. The result is an FPG of 112 mg/dL. Recognizing the discrepancy, the physician repeats both tests at the lab and gets an FPG of 108 mg/dL and an A1c of 6.2%.

- Can you explain the discrepancy between these two results?

Plan

- Smoking cessation
- CV risk stratification (to determine need for lipid treatment)
- Lifestyle modifications:
  - Weight loss of at least 7% of body weight.
  - 30 minutes exercise/day x 5 days per week.

- Would you consider any additional treatments for this patient?
- Are any medications recommended?

Case 2

Chief Complaint

- 43 y/o female presents for her first visit to your clinic in 5 years.

FMX

History of Present Illness

- He has not seen a physician in several years. The last time she was in your clinic, she discussed weight loss with the doctor, and did not want to return until she was successful.
- “I am so happy, I have lost 20 pounds in the last month and I am not even trying!”

FMX

Past Medical History

- Obesity
- Hypertension
- Depression

FMX

Medications, Allergies

- Lisinopril 40 mg daily
- Celexa 20 mg daily
- Has not taken any medications in several years.

FMX

Family History

- Diabetes in several family members including both parents.

FMX

Social History

- Smokes 1 ppd (23 pack year history)
- Sedentary lifestyle
- Admits to 1-2 beers several days a week.

FMX

Review of Systems

- Weight loss as noted, no fevers/chills.
- Admits to blurred vision, has noted for a few years.
- Denies headache, chest pain, dyspnea.
- No cold intolerance, skin/hair changes.
- Increased urination, increased thirst, for at least 9 months.
- Scant puritic white vaginal discharge.

FMX

Physical Examination

- Temp 97.4, HR 88, Resp 16, BP 138/92
- Wt.: 320 lbs., Ht.: 5 ft. 5 in.

- Gen: obese female, approximate age, NAD
- Eyes: PERRLA, EOMI, fundi w/o vascular changes noted.
- CV: RRR without murmur
- Lungs: mildly prolonged expiration, scant end-expiratory wheeze, no rhonchi, no rales
- GI: Bowel sounds positive, nontender, no masses, no organomegally
- Skin: no rashes noted.

FMX

- Question #1: What would be the most appropriate test to use for screening in this patient.

FMX

Laboratory/Radiology

- Random lab glucose: 246 mg/dL
- A1c: 9.5%
- Creatinine: 0.9 mg/dL

FMX

- Question #2: Is any additional testing necessary to determine the type of this patients diabetes.

FMX

- Question #3: What would be the most appropriate initial treatment for this patient?

FMX

Plan

- Smoking cessation
- CV risk stratification (to determine need for lipid treatment)
- Lifestyle modifications:
  - Weight loss of at least 7% of body weight.
  - 30 minutes exercise/day x 5 days per week.
- Medical Nutrition therapy.

FMX

Plan

- Insulin glargine 25 units daily at bedtime.
- Metformin 500 mg once daily.
  - (patient may self-titrate metformin dose, taking an additional 500 mg tablet every 2 weeks as tolerated to max of 2 tablets twice daily.)

FMX

Assessment

- Despite good follow-up care, and careful titration of the patients of the patients metformin and insulin glargine, she does not achieve a goal A1c of < 7.0%.

FMX

Assessment

- 6 months after starting:
  - Insulin glargine 80units daily at bedtime + metformin 1000 mg twice daily
- AM fasting glucose: 125 mg/dL
- A1c: 8.5%
- 2-hour post-dinner: 220 mg/dL

FMX

- Question #4: What might you consider as the next step in this patients treatment?

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Associated Sessions

- Diabetes Update 2016:
  What's New in an Old Disease
- Diabetes Update 2016: What's New in an Old Disease: Ask the Expert

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