Emerging Challenges in Primary Care: 2017

Integrating Diet and Lifestyle Management into Diabetes Care: Practical Strategies for Busy Clinicians and Struggling Patients

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Disclosures


- Mark Stolar, MD serves as a speaker/advisory board member for Astra Zeneca.

- Jeff Unger, MD, ABFM, FACE serves on the advisory board for Abbott, Novo Nordisk, Janssen, and Intarcia.
Learning Objectives

- Understand ways to integrate lifestyle management into diabetes care
- Discuss strategies to help patients improve dietary management of their diabetes
- Recognize how to improve medication adherence for patients at various stages of diabetes

The Role of Physical Activity

- Exercise Video

Case 1: Elmer, a 45 Year Old Filipino Man Treatment Naïve Patient With T2DM

- Asymptomatic. Diabetes discovered during annual physical exam.
- Both parents and 2 sisters have T2DM. Live in Philippines
- Father has chronic kidney disease and a history of MI at age 51
- Works as a bus driver. Graveyard shift. Sleeps 4-5 hours a night
- Epworth score is 13 (sleepy)
- No exercise (too tired). No alcohol
- Skips breakfast. Snacks frequently
Elmer

- Physical exam is unremarkable
- BP is 134/88. BMI 25 kg/m2
- A1C=9.0%
- Random Blood glucose is 245 mg/dL

Discussion Points For Elmer

- How would you describe “diabetes” to this patient?
- Ask the question “what are you most afraid of regarding your diagnosis?” Then, how would you likely respond?
- How often would you suggest self-blood glucose monitoring?
- What are treatment goals?
  - Glycemic
  - Blood pressure
  - Lipids

Elmer Agrees To Initiate An Exercise Program

Exercise
- How many days/week?
- Duration of exercise?
- What type of exercise?
- Should he perform SBGM prior to and after exercise
- How do you treat hypoglycemia?
Elmer's Lifestyle Instructions

- What are the glycemic targets prior to exercise?
- Patient's blood sugar is 320 mg/dL. Should he exercise to lower blood glucose level?
- Does Elmer need an exercise stress test prior to initiating an exercise program?

Elmer Summary-Lifestyle Goals

- Diabetes pathogenesis and progression discussed
- People can live an normal lifespan with diabetes
- Metabolic targets are determined to minimize risk of hypoglycemia, weight gain, CAD and renal dysfunction
- Target A1C is 6.5-7%
- SBGM fasting first 7 days of the month (FBG < 126 mg/dL)
- Exercise 30 min/day 5 days a week. CV and resistance training suggested
- Diet relevant to Elmer’s ethnic background developed.

Elmer Summary-Recommendations

- Refer to RD or CDE based on ADA Clinical Recommendations
- No meal skipping. Avoid foods high in saturated fat
- Obtain a sleep study
- Advised to sleep 7-8 hours daily
- No smoking
- No alcohol
- Reassure that patient is likely to experience a normal and healthy life
Making Diet and Weight Loss Work

- Diet Video

Case 2: Gladys, a 42 year old Obese Patient With T2DM

- T2DM x 8 years- hx of gestational diabetes in 2005
- Co-morbidities: HTN, hyperlipidemia, sleep apnea, urinary incontinence, tendonitis of knees
- BMI= 40 kg/m2
- Waist circumference= 42 inches
- Currently on metformin glimepiride and sitagliptin for diabetes

Obesity: Scope of the problem in the U.S.
1999-2010 data

- Prevalence of adult obesity is 36%
- Overweight and obesity prevalence is 69%
- Overweight + obesity prevalence is 77-80% for non-Hispanic blacks, Hispanics, and Mexican-Americans
- Obesity rates highest in lowest socioeconomic levels and in women who self-identify a part of an ethnic minority -rates of obesity 50% in some groups
- Obesity prevalence in children and adolescents is 16.9%

Obesity Risk Higher if:
- Female, black (women), Hispanic or and native American
- Maternal smoking or diabetes
- Lower socioeconomic status
- Sedentary lifestyle
- Higher fast-food intake
- Increased time-spent watching TV
- Pregnancy (2-3kg if age 18-30) – ? more in black women
- Sleep deprivation (<7 hours nightly, shift work, untreated sleep apnea, sleep fragmentation, disordered chronobiology)
- Smoking cessation – average 4-5kg
- Medications (DM, TCAs, Antipsychotics)
- Injury/condition impairing ambulation/use of lower extremities

Obesity Conceptual Framework

Adverse Health and Social Consequences Associated With Obesity
BMI in NOT Perfect

- Scans from 6 different people all with different body images.
- All 5-7, weight 172
- BMIs 25.4 (overweight)
- Some carry more fat in abdomen, others in thighs
- Some have more muscle than fat
- Especially important to remember in Asian and South Asian patients

Treatment: Modest Weight Loss = Major Health Benefits

- T2DM prevention
- Including T2DM, better glycemic control, medication reduction
- Improvement in urinary incontinence, mobility, joint pain, weight-related quality of life
- Improvements in CVD

Consider the benefits that a 5%-10% weight loss will have on patients who are overweight or obese.

Diabetes Prevention Program: Mean Weight Change

Matching Treatment Strategies With Patients

**Lifestyle Management**
- All patients for whom weight loss is recommended

**Pharmacotherapy**
- Unable to lose or sustain sufficient weight loss with lifestyle management alone
- Motivated to lose weight
- Obesity-related complications with adverse health consequences

**Surgery**
- Severe complications that can be treated with weight loss
- Not responding sufficiently to behavioral treatment with or without pharmacotherapy
- Highly motivated to lose weight
- History of adherence to lifestyle and medical therapies
- Low risk for surgical complications

**Defining Lifestyle Treatment**

- Non-drug treatment in which an individual opts to engage and persist in regular activities to prevent, improve, or control a medical condition.

- For obesity treatments may include activities affecting:
  - Dietary patterns and content
  - Activity level
  - Sleep quantity and quality
  - Other behavioral habits

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**Prudent Dietary Recommendations for Addressing Obesity and Cardiovascular Risk Factors**

- Low SFA (<7%), TFA (<1%), dietary cholesterol (<200mg)
- Rich in PUFA
- Ample fiber 30g/day – soluble fiber emphasis
- Nuts as able 1 oz a day and other soy and legumes
- Lean dairy
- 5-7 servings of fruits and vegetables daily
- Limit sugary beverages, cookies, sweets, alcohol
- Limit refined foods
- Rich in whole grains
- Energy balanced to prevent weight gain
- Avoid high salt food – over 450mg/serving and <2000mg/day

For many, a low calorie diet that is low in fat and refined carbohydrates is best for long-term adherence.

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**What exercise is Recommended?**

- CDC/ACSM -1993: 30 min. of moderate activity most/all days of the week (also endorsed by ACOG 2012 for pregnant women with no contraindications)
- AHA – 2003: 30-60 min. of activity 4-6x weekly and resistance training 2-3 x weekly
- USPSTF – 2012: avoid inactivity; be physically active > 150 minutes/week; include muscle-strengthening activities twice weekly or more (endorsed by AAFP)
Activity as a single intervention

Pharmacological Treatment of Obesity

- Current medications 5-12% weight loss
- Benefits only last as long as patient takes the medication. Chronic treatment likely needed.
- Drugs probably not paid for by insurance so cost is a big issue for patients.
- Issues of FDA approval, long term safety, and efficacy.
- Are medications an appropriate treatment modality for obesity?

Who is a Good Candidate For Bariatric Surgery

- BMI > 35 with co-morbidities or >40 without comorbidities
- Age 20-60
- Co-morbidities: Diabetes, sleep apnea, reflux, Hypertension, DJD
- Failed other forms of therapy
- No serious, active cardiac, pulmonary, or psychiatric disease
- A1C < 8.5%
Summary - Gladys

- Explain to Gladys that weight loss target of 7% would reverse underlying fatty liver and enhance effectiveness of current meds.
- Explain that although changing diabetes meds might help weight loss, it won't occur without dietary changes.
- Carb counting helps! Give your patient a 120 gram a day budget to follow.
- Remember although obesity is an immense barrier, your focus is still on successful management of diabetes. Make that a focus of the visit.

Managing the Burden of Multiple Medications: Diabetes Distress

- Adherence Video

Case 3: Jim, a 58 Year Old Man With Poorly Controlled T2DM

- T2DM x 14 years
- A1C ranges between 8.6-11%
- Symptoms: fatigue, anxious, nocturia, erectile dysfunction, peripheral sensory neuropathy, shingles
- "Life is just too stressful"
- Screening for depression negative
- Screening for bipolar disorder negative
- What is possible diagnosis?
### Current meds:
- Canagliflozin 300 mg/d
- Basaglar insulin 60 units at 9 PM
- Liraglutide 1.6 mg/d
- Metformin 1000 mg with breakfast and dinner
- Atorvastatin 80 mg/d
- Aspirin 81 mg/d
- Vitamin D3 5000 IU/d
- Magnesium oxide 400 mg/d
- Losartan 100 mg/d
- HCTZ 25 mg/d
- Omeprazole 40 mg/d
- Minocycline 100 mg/d
- Pregabalin 150 mg TID
- Tadalafil 20 mg PRN
- Multiple OTC supplements

### Exam:
- BP 170/102
- HEENT: Bucal mucosa dry. Poor dentition
- Lungs: Decreased breath sounds
- COR: Distant heart sounds
- CNS: Loss of vibratory and position sense. + Alldynia in both ankles

### Labs:
- A1C 9.5%
- LDL 165 mg/dL
- Microalbumin: 88 mcg/mg
- eGFR: 55 mL/min

### Diabetes Distress Screening Scale

<table>
<thead>
<tr>
<th>Feeling</th>
<th>Not a Problem</th>
<th>Moderate Problem</th>
<th>Serious Problem</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Feeling overwhelmed by the demands of living with diabetes.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>2. Feeling that I am often failing with my diabetes regimen.</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Note: If average of the 2 screening items is ≥ 3 or sum of 2 answers is ≥ 6, administer the complete 17 Item DSS scale: [http://www.diabetesed.net/page/_files/diabetes-distress.pdf](http://www.diabetesed.net/page/_files/diabetes-distress.pdf)

Managing Diabetes Distress Syndrome

- Review and simplify meds
- “Negotiate” with patient how many meds he is willing to take per day. Do anything possible to improve adherence
- Consider a “patch pump” for patients who do not like to inject
- Self blood glucose monitoring fasting. Give targeted goals
- Frequent visits
- Consider referral to CDE
- Always “praise” patient for effort
- Never give up on patient. “I will always have your back”

Smoking Cessation

- 1-800-Quitnow
- Red vine licorice as a substitute for nicotine
- Avoid triggers for nicotine use-sitting around after dinner or drinking coffee
- Varenicline
- Bupropion
- Pick a cold turkey date
- Make certain that the significant other stops smoking at the same time
- Is significant other smoking as well?

Summary

- Practitioners should encourage patients to “create health” at every visit
- Obesity is a predictor for diabetes and a marker of insulin resistance
- Advise patients to exercise 30-45 minutes daily and strive for 5 % weight loss. Weight maintenance should be advice for patients with a BMI of ≤ 25 kg/m²
- Reduce intake of processed foods, sugary drinks and alcohol
- Refer to a CDE or RD within 1 year of diabetes diagnosis per ADA Guidelines
Questions?
doctors' strike