Key Elements in Managing Diabetes

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Presentor Disclosure
No conflicts of interest to disclose

Objectives
Upon completion the participant will be able to:
1. State 2 required components of a certified diabetes self-management program
2. Identify 2 key elements of managing patients with diabetes
3. Name 2 options available for patients related to ongoing support

Background History
• The Cleveland Clinic is a non-profit, multi-specialty academic medical center that integrates clinical and hospital care with research and education.
• Over 74 outpatient locations including 16 full service family health centers
• 8 community hospitals
• Locations including Canada, Florida, Las Vegas and Abu Dhabi

Stephanie Tubbs Jones Health Center
• Opened in 2011 after the closing of Huron Hospital
• Located in East Cleveland Ohio
• Population in East Cleveland:
  - 93.2% African American
  - Median household income: $21,070
  - Individuals below poverty level: 39.9%

Payor Mix at Stephanie Tubbs Jones
• 40% Medicaid
• 30% Medicare
• 18% Self Pay
• 10% Commercial
Racial and Ethnic Differences in Diabetes

STJHC serves a racially and ethnically diverse patient population, many of whom are at greater risk of developing diabetes over the course of their lifetime.

- **Diabetes in Our Community**
  - Diabetes prevalence in the community is 12.6 compared to 9.1 in the state of Ohio.
  - STJHC has an 18% uninsured population compared to less than 5% at other Cleveland Clinic sites.
  - The life expectancy for the community is up to 20 years shorter than adjacent communities.

The Cost of Diabetes

Diabetes and prediabetes both lead to higher annual medical expenditures for individuals.

<table>
<thead>
<tr>
<th>Cost of Care in Absence of Diabetes¹</th>
<th>Cost of Care with Managed Diabetes¹</th>
<th>Cost of Care with Unmanaged Diabetes²</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Annual Cost of Care</strong></td>
<td><strong>Total Cost: $5,095</strong></td>
<td><strong>Total Cost: $14,210 (estimated)</strong></td>
</tr>
<tr>
<td>Inpatient Care: $2,840</td>
<td>$6,605 ($3,765)</td>
<td>$9,115 additional annual expenditures attributed to unmanaged diabetes (in excess of a non-diabetic’s annual cost of care)</td>
</tr>
<tr>
<td>Outpatient Care: $1,388</td>
<td>$2,686 ($1,301)</td>
<td>Higher costs associated with higher inpatient utilization (both admissions and hospital days) and lower primary care utilization (visits)</td>
</tr>
<tr>
<td>Medications/Supplies: $867</td>
<td>$2,451 ($1,584)</td>
<td>Unmanaged diabetes costs approximately 21% more than managed diabetes</td>
</tr>
</tbody>
</table>

Values in parentheses are excess expenditures attributed specifically to diabetes.

What is Diabetes Self-Management Education?

Diabetes self-management education (DSME) is defined as the ongoing process of facilitating the knowledge, skills and ability necessary for pre-diabetes and diabetes self-care.

Referring Patients for Diabetes Self-Management

- What resources are available?
- How do you know the resource is credible?
- Diabetes Self-Management Education and Support should be part of the treatment plan

Resources

DSME may be provided by an independent practitioner or as part of a certified program.

Practice Credentials for Diabetes Education

Currently there are two specialty practice credentials in the U.S.:

- Certified Diabetes Educator (CDE)
- Board Certified-Advanced Diabetes Managers (BC-ADM)
The Role of the CDE

Health care professionals whose practice focuses on educating individuals with diabetes or at risk for diabetes

Possess in-depth knowledge and skills related to communication, counseling and education

Most commonly are registered nurses, dietitians and pharmacists

How do I find a Certified Diabetes Educator?

http://www.ncbde.org/living-with-diabetes/findcde/

Ask your colleagues about resources and established partnerships

Navigation Center

DSME Programs

DSME programs obtain recognition from either the American Diabetes Association

OR

accreditation from the American Association of Diabetes Educators

BOTH follow the established National Standards

Standards for Diabetes Self Management and Support

You can access the standards using the following link:
The National Standards

Currently, there are 10 standards

Standards 6 through 9 address curriculum content, individualization, ongoing support and patient progress

Mandatory Curriculum Topics

1. Diabetes disease process and treatment options
2. Physical activity
3. Medications
4. Monitoring blood glucose

Topics (cont.)

5. Preventing, detecting and treating acute complications
6. Preventing, detecting and treating chronic complications
7. Strategies that address psychosocial issues
8. Strategies to promote health and behavior change

The needs of each patient should be addressed on an individual basis. A mutually agreed upon education and support plan which focuses on behavior change should be developed.
Ongoing Support

Standard 8 addresses ongoing support

The support plan is a mutually agreed upon plan between the patient and instructor for ongoing self-management support.

Examples of Ongoing Support

Shared visits with case manager or care coordinator
Community groups (cooking classes, exercise programs, support groups)
Telephone encounters and reminders
Scheduled in person visits (frequency varies based on need)
Internet resources
Telehealth visits
Diabetes phone APPS

Medical Management

A1c
Dyslipidemia/Lipid Management
Hypertension/Blood Pressure Control
Renal Function and Prevention of Nephropathy

For the complete 2014 executive summary go to:
http://care.diabetesjournals.org/content/37/Supplement_1/S14.extract

What is the A1c lab test?

The A1c is a blood test that is done in a lab. It measures how much sugar is stuck on your red blood cells. You will have an A1c every 3-6 months. The A1c measures your blood sugar level and gives you an average over the past 2-3 months. It tells you if your treatment plan is working over time. If your level stays too high, your treatment may need to be changed. The A1c goal for people with diabetes is less than 7%

To access a list of recognized DSME and support programs go to:
www.diabetes.org
www.aade.org
Diagnosing Diabetes

A1c

<table>
<thead>
<tr>
<th>If your A1c is this:</th>
<th>Your average daily blood sugar is around this</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0%</td>
<td>57 (75-120)</td>
</tr>
<tr>
<td>6.0%</td>
<td>125 (100-152)</td>
</tr>
<tr>
<td>7.0%</td>
<td>164 (123-185)</td>
</tr>
<tr>
<td>8.0%</td>
<td>183 (147-217)</td>
</tr>
<tr>
<td>9.0%</td>
<td>212 (170-249)</td>
</tr>
<tr>
<td>10.0%</td>
<td>240 (193-282)</td>
</tr>
<tr>
<td>11.0%</td>
<td>269 (217-314)</td>
</tr>
<tr>
<td>12.0%</td>
<td>298 (240-347)</td>
</tr>
</tbody>
</table>

A1c

Should be performed 2 times a year in patients who are meeting treatment goals and who have stable glycemic control

Perform the test quarterly in those who have had changes in therapy or are not meeting goals

The current recommended goal from the ADA in non-pregnant adults is < 7%

More stringent goals of < 6.5% may be appropriate for selected patients (short duration of diabetes or no significant history of coronary vascular disease) and without significant risk of hypoglycemia

Glycemic Goals

Lowering A1c to below or around 7% has been shown to reduce microvascular complications of diabetes and if implemented soon after the diagnosis of diabetes, is associated with long-term reduction in macrovascular disease.

Detailed Cost Information

Per-person treatment cost associated with progressive A1C levels

<table>
<thead>
<tr>
<th>Levels of Hemoglobin A1c (%) Being Compared**</th>
<th>Greater Per-Person Treatment Cost Associated with a 1 Percentage Point Higher Hemoglobin A1c Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% with 9%</td>
<td>$1,200-$4,100</td>
</tr>
<tr>
<td>9% with 8%</td>
<td>$900-$3,100</td>
</tr>
<tr>
<td>8% with 7%</td>
<td>$650-$2,200</td>
</tr>
<tr>
<td>7% with 6%</td>
<td>$400-$1,500</td>
</tr>
</tbody>
</table>

**Less than 7% is the recommended hemoglobin A1c value.
Less stringent goals, such as an A1c < 8% may be appropriate for patients with a history of severe hypoglycemic events or extensive co-morbid conditions.

Teaching the Patient
Daily blood glucose monitoring is important in order to determine patterns and make changes quickly.
The A1c is equally important but does not tell the entire story.
Discussion with the patient about BOTH is critical in their care.

Patient Education Resource
http://www.learningaboutdiabetes.org/

Watch for sudden increases in the A1c.
Possible causes may be:
- Infection
- Recent Hospitalization for DKA
- Change in Medication (steroids)

A1c Limitations
Conditions that affect erythrocyte turnover (hemolysis, blood loss) and hemoglobin variants (sickle cell, renal failure, anemia)
Dyslipidemia/Lipid Management

Frequency of testing in adult patients with diabetes is a fasting panel at least annually.

Lipid Goals

In diabetes patients without overt cardiovascular disease:
- LDL < 100 mg/dl
- HDL > 40 mg/dl in men
  > 50 mg/dl in women
- Triglycerides < 150 mg/dl

In patients with overt cardiovascular disease:
- LDL < 70 mg/dl

Statin therapy

Statin therapy should be added to lifestyle therapy regardless of baseline levels in patients with overt cardiovascular disease and those over age 40 with one or more risk factors (family history, smoking, hypertension).

Lifestyle modification focuses on the reduction of saturated fat, trans fat and cholesterol intake in the diet.

Increase activity

Hypertension/Blood Pressure Control

Recommended frequency: Should be monitored at every visit.

Goal for systolic blood pressure (SBP)
- < 140 mm/Hg

Goal for diastolic blood pressure (DBP)
- < 80 mm/Hg
Pharmacological Therapy

Should include either and ACE inhibitor OR
An angiotensin receptor blocker (ARB)

Dietary Sodium Recommendations

< 2,300 mg/day for general population
<1500 mg/day for special populations
>50 years of age
African American at any age
diagnosis of chronic diseases
hypertension
diabetes
cardiovascular disease
kidney disease
The average American consumes 3400-4200 mg of sodium per day

Lifestyle Changes

Lifestyle therapy consists of the following:

Smoking cessation (if needed)
Weight loss (if needed)
Dietary Approaches to Stop Hypertension (DASH) style diet
Moderation of alcohol intake
Increased physical activity

Dietary components of DASH

- Fruits
- Vegetables
- Low fat or nonfat dairy
- Whole grains
- Lean protein, primarily from poultry and fish
- Nuts and beans

Renal Function and Prevention of Nephropathy

Optimize both glucose and blood pressure control to reduce risk or slow progression of nephropathy
Screening Tests

- Random measurement of albumin/creatinine ratio
- 24 hour timed collection

Frequency of Screening Tests

Perform annual test to quantitate urine albumin excretion in Type 1 patients with a duration of diabetes ≥ 5 yrs.

Perform same in ALL Type 2 patients starting at diagnosis

Abnormalities in Albumin Excretion

- Normal: < 30 mg/G
- Increased: > 30 mg/G

Because of variability in urinary albumin excretion, 2 or 3 specimens collected within a 3 to 6 month period should be abnormal before considering the patient to have developed an increase

Other Possible Causes for Elevations

- Exercise within 24 hours
- Infection
- Fever
- CHF
- Marked hyperglycemia
- Marked hypertension

When GFR is < 60 mL/min/1.73 mL, evaluate for potential chronic kidney disease

Consider referral to a nephrologist or physician experienced in the care of kidney disease
Continue to monitor urine albumin excretion to assess both response to treatment and progression of disease.

When ACE inhibitors, ARB's or diuretics are used, monitor serum creatinine and potassium levels for increases in creatinine or changes in potassium.

ACE inhibitor or ARB NOT recommended in patients with normal blood pressure and albumin excretion < 30 mg.

In patients with modestly elevated (30 to 200mg) use of an ACE or ARB is recommended.

Summary

- Diabetes is a chronic progressive disease that requires concerted effort on the patient.
- The Clinical Practice Recommendations and National Standards for Diabetes Self Management and Support are excellent guides.
- Each patient is unique and diabetes is only one component of that patient’s complex care.

Questions??

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THANK YOU!!!