Diabetes Mellitus Standards of Care

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KEYWORDS

- Diabetes mellitus • Glycemic goals • Care of the hospitalized diabetic patient
- Diabetes self-management education

KEY POINTS

- Care of the patient with diabetes can be complex and requires an interdisciplinary approach with an active patient role.
- Roles of the nurse related to the care of patients with diabetes include promoting health, disease prevention, providing patient care, and promoting patient compliance by simplifying self-care.
- Diagnostic criteria and treatment goals for diabetes mellitus are provided.
- Hypoglycemia increases mortality and should optimally be prevented and treated when it occurs.
- Diabetes self-management education is a necessary and reoccurring part of effective management of diabetes.

INTRODUCTION

Diabetes mellitus is a chronic illness that is complex, with multiple contributing factors and complications.[1] There are various types of diabetes mellitus, including but not limited to type 1 diabetes resulting from beta cell destruction that results in a lack of insulin secretion, type 2 diabetes resulting from a progressive defect in insulin secretion in combination with insulin resistance, and gestational diabetes mellitus.[1] Care of the patient with diabetes can be complex and requires an interdisciplinary approach with an active patient role.[1] Guidelines for the management of diabetes are frequently complex and lengthy. Translating evidence-based guidelines into nursing practice is necessary for promotion of positive patient outcomes. Nurses are a critical component in the care of patients with diabetes. Nurses are responsible for monitoring glucose levels, administering hypoglycemic agents,[2] providing patient education,[3] and monitoring for complications.[4] Overall, the roles of the nurse related to the care of patients

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with diabetes include promoting health, disease prevention, providing patient care, and promoting patient compliance by simplifying self-care.[4] Furthermore, because discharge planning for diabetic patients should begin at admission,[1] the nurse should be aware of guidelines related to diabetes care and diabetes self-management.

IMPACT OF DIABETES MELLITUS

The World Health Organization (WHO) estimated that 9% of adults worldwide suffer from diabetes.[5] The incidence of diabetes mellitus is rising in the United States. The number of individuals diagnosed with diabetes rose from 5.6 million in 1980 to 20.9 million in 2011.[6] It is projected that an additional 8.1 million individuals have diabetes but are undiagnosed.[7] The incidence of diabetes in increasing more dramatically for patients with lower educational levels and among the black population.[6]

Diabetes also increases the incidence of morbidity and mortality. There is an increased incidence of hypertension, dyslipidemia, myocardial infarction, stroke, eye disease, kidney disease, and lower limb amputation in patients with diabetes.[6] Diabetes ranks as the seventh leading cause of mortality in the United States.[6]

Diabetes incurs significant financial expenditures. Diabetes was the second leading cause of hospitalization in 2010.[6] In 2012, it was estimated that the cost of diabetes was $245 billion. These expenditures included $176 billion for direct medical care and $69 billion for indirect medical costs (reduced productivity, absenteeism, and early mortality).[8]

DIAGNOSTIC CRITERIA

The American Association of Clinical Endocrinologists and American College of Endocrinology (AACE/ACE)[9] and the American Diabetes Association[1] (ADA) have similar guidelines regarding the diagnostic criteria for diabetes mellitus. ADA guidelines regarding diagnosis of prediabetes (increased risk for diabetes) includes the following criteria.

- A1C 5.7-6.4%
- Fasting plasma glucose 100–125 mg/dL (5.6–6.9 mmol/L)
- 2-h plasma glucose (75 mg oral glucose tolerance test)[1]

ADA guidelines regarding diagnosis of diabetes includes the following criteria.

- A1C $\geq$6.5%
- Fasting plasma glucose $\geq$126 mg/dL (7.0 mmol/L)
- 2-h plasma glucose $\geq$200 mg/dL (11.1 mmol/L)
- Random plasma glucose $\geq$200 mg/dL (11.1 mmol/L)
- Classic hyperglycemic symptoms[1]

Screening for gestational diabetes mellitus (GDM) is recommended, between 24 to 28 weeks of gestation, for pregnant women without diagnosed diabetes.[1] A 75 g oral glucose tolerance test (OGTT) includes measurement of a fasting glucose and glucose measurement at 1- and 2-hour intervals. Diagnosis of GDM includes the following criteria:

- Fasting glucose: $\geq$92 mg/dL
- 1 h OGTT: $\geq$180 mg/dL
- 2 h OGTT: $\geq$ 153 mg/dL[1]

INITIAL EVALUATION

A comprehensive medical evaluation of all patients diagnosed with diabetes should be completed at the initial provider visit.[1] This comprehensive medical evaluation