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THERAPY FOR DIABETES MELLITUS AND RELATED DISORDERS

- Diagnosis and Classification
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- Diabetes Complications
- Medical Nutrition Therapy
- Exercise and Obesity
- Medications and Insulin Treatment

FIFTH EDITION

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Dr. Mudaliar is Staff Physician, Section of Diabetes/Metabolism, VA San Diego HealthCare System, and Associate Clinical Professor of Medicine, University of California at San Diego, San Diego, California. Dr. Henry is Chief, Section of Diabetes/Metabolism, VA San Diego HealthCare System, and Professor of Medicine, University of California at San Diego, San Diego, California.

26. Hyperglycemia in the Hospital Setting

Susan Shapiro Braithwaite, MD, FACP, FACE

Hyperglycemia in the hospital setting occurs commonly and correlates with mortality and length of stay for patients with or without a previous history of diabetes (1,2). The medical and surgical outcomes of hospitalized patients depend in part on prevention or control of hyperglycemia in the hospital (3–10). The morbidities associated with hospitalization and the conditions of hospital routine increase the risk for spontaneous and iatrogenic hypoglycemia (11–17). Management strategies do not invariably succeed in meeting present-day glycemic targets (18).

The fundamental problem is the need to control hyperglycemia in the hospital setting for a vulnerable population without introducing morbidity or mortality due to hypoglycemia. Insulin resistance fluctuates in relation to the nature and severity of the underlying medical condition, comorbidities, nutritional status, and organ dysfunction. Concomitant treatment of the patient, including medications and carbohydrate exposure, frequently change. Preestablished ambulatory therapies are not necessarily efficacious or safe. The factors responsible for hyperglycemia, including stress and mediators, and the pathogenesis of harms induced by hyperglycemia in the hospital setting or of the benefits conferred by insulin therapy are incompletely understood. There is proof of inferiority of sliding-scale management compared to scheduled subcutaneous insulin and intravenous insulin infusion (19,20). Within either category of preferred management, however, scheduled subcutaneous insulin therapy or intravenous insulin infusion, there is lack of proof of superiority of any particular published approach. The ideal glycemic targets remain controversial and might differ according to factors that include patient population, diagnoses, and setting within the hospital.

A second problem is the need to work within the constraints of complex institutional care. Successful management requires coordination of blood glucose monitoring, nutrition, and administration of medication. Handoffs by providers, shift changes of nurses, and patient relocations between the emergency department or the preadmitting office, holding areas, the operating room, the critical-care setting, general wards, and home all require communication strategies. Important to patient safety is the protection of two competing principles, individualization of patient care and institutional standardization of procedures to excellence. To achieve individualization according to patient characteristics, the