

An Analysis: Hyperglycemic Intensive Care Patients Need Continuous Glucose Monitoring—Easier Said Than Done

Brenda G. Fahy, M.D.,¹ and Douglas B. Coursin, M.D.²

Abstract

Experts and agencies increasingly advocate tight glycemic control (TGC) using intensive intravenous insulin therapy in critically ill patients. Questions remain about the “best” glucose goal, the universal benefit of TGC in the heterogeneous adult intensive care unit (ICU) population, and concerns about the underrecognized incidence of hypoglycemia and its neuropsychological sequelae. TGC is time-consuming for ICU staff, and pathophysiologic, technical, and personnel factors impact the accuracy of point-of-care glucose monitoring. TGC in the ICU requires safe, accurate, robust, rapid, and continuous glucose measurements (CGM) that lack interference from drugs or other substances. Establishment of reliable CGM may provide the foundation for a closed loop, microprocessed system resulting in an artificial islet cell. This commentary focuses on reports from two respected groups on the potential use of CGM devices in the critically ill. It emphasizes the challenges of applying this technology in the ICU and looks to future refinements to address them.

J Diabetes Sci Technol 2008;2(2):201-204

Author Affiliations: ¹Anesthesiology and Critical Care Medicine, University of Kentucky, Lexington, Kentucky, and ²Anesthesiology and Medicine, University of Wisconsin, Madison, Wisconsin

Abbreviations: (FDA) Food and Drug Administration, (ICU) intensive care unit, (IIT) intensive insulin therapy, (POC) point of care, (TGC) tight glycemic control

Keywords: adult, critical care, glucose monitoring glucometer, ICU, tight glycemic control

Corresponding Author: Douglas B. Coursin, M.D., B6/319 UW CSC, Madison, WI 53792-3272; email address Dcoursin@wisc.edu