

The Future Is Now: Software-Guided Intensive Insulin Therapy in the Critically Ill

Rishi Rattan, M.D., and Stanley A. Nasraway, M.D., FACP, FCCP, FCCM

Abstract

Since the development of intensive insulin therapy for the critically ill adult, tight glycemic control (TGC) has become increasingly complicated to apply and achieve. Software-guided (SG) algorithms for insulin dosing represent a new method to achieve euglycemia in critical illness. We provide an overview of the state of SG TGC with an eye to the future. The current milieu is disorganized, with little research that incorporates newer variables of dysglycemia, such as glycemic variability. To develop and implement better algorithms, scientists, programmers, and clinicians need to standardize measurements and variables.

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Author Affiliation: Tufts Medical Center, Boston, Massachusetts

Abbreviations: (GRIP) Glucose Regulation for Intensive Care Patients, (GV) glycemic variability, (IIT) intensive insulin therapy, (MPC) model predictive control, (PID) proportional integral derivative, (SG) software guided, (TGC) tight glycemic control

Keywords: computerized decision support system, hyperglycemia, intensive insulin, software, tight glycemic control

Corresponding Author: Stanley A. Nasraway, M.D., FACP, FCCP, FCCM, Tufts Medical Center, 800 Washington St., Boston, MA 02111; email address snasraway@tuftsmedicalcenter.org