

A Web-Based Insulin Infusion Calculator (IIC)

Published date: Feb. 1, 2012

Technology description

Summary

It is estimated that an average of 38 percent of all hospitalized patients experience hyperglycemia and 32 percent of these patients have no history of diabetes. Hyperglycemia often contributes to undesirable clinical outcomes in critically ill patients. It has been demonstrated that using intravenous insulin to manage glycemia improves clinical outcomes. However, the paper-based, manual protocol used to calculate insulin infusion dosages is complicated to use and subject to human calculation errors and inter-practitioner variability. More importantly, implementation of the paper protocol produces low protocol compliance and results in increased episodes of hypoglycemia when compared to a computer based insulin infusion calculator.

Description

UC San Diego researchers and physicians have developed a software system—an insulin infusion calculator (IIC)—to improve insulin compliance and to reduce the number of calculation errors. To briefly summarize, the invention is a hospital-tested software system designed to achieve desirable blood glucose control and minimize hypoglycemia by automating the calculation for the appropriate insulin dosage for intravenous infusion.

The computerized insulin calculator works by prompting onsite glucose measurements and calculating an intravenous insulin infusion dosage to achieve the therapeutic goal of maintaining blood glucose (BG) levels within the range specified by the unit's medical director (the default setting is 91-150 mg/dL). The system is Web based with access at all bedside computers in the intensive care units and step down telemetry units. It is designed to recognize trends in blood glucose and uses an algorithm to derive a "multiplier" to dictate subsequent insulin dosing.

Institution

[University of California, San Diego](#)

联系我们



叶先生

电话：021-65679356

手机：13414935137

邮箱：yeyingsheng@zf-ym.com