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## Utilization of a Computerized Intravenous Insulin Infusion Program to Control Blood Glucose in the Intensive Care Unit

Rattan Juneja, Corbin Roudebush, Nilay Kumar, Angela Macy, Adam Golas, Donna Wall, Cheryl Wolverton, Deborah Nelson, Joni Carroll, Samuel J. Flanders. *Diabetes Technology & Therapeutics*. Jun 2007, Vol. 9, No. 3: 232-240

**Background:** This proof of concept study was designed to evaluate the safety and effectiveness of an intravenous insulin dosing calculator, the Clarian GlucoStabilizer™ program, and to determine the feasibility of its use as part of a glycemic control program. This paper discusses the impact of the GlucoStabilizer program on the glycemic control of intensive care patients with hyperglycemia.

**Methods:** Patients admitted to the intensive care unit (ICU), requiring intravenous insulin, were treated using the GlucoStabilizer program. This program calculates an insulin drip rate based on the low and high blood glucose (BG) levels of the desired target range, the patient's current and previous BG levels, and an insulin sensitivity factor, with a goal of safely and expeditiously achieving and maintaining the patient's BG in the target range.

**Results:** From October 2004 through March 2006, the GlucoStabilizer program has been used to treat 2,398 patients in the ICUs, with 177,279 BG measurements in its database. In these patients:

- 61.0% of BGs have been in the target range of 80–110 mg/dL.
- 90.9% have been in the wider range of 60–150 mg/dL.
- The average BG was 106.5 mg/dL (SD 39.1 mg/dL).
- The frequency of hypoglycemia (BG <50 mg/dL) was 0.4%.

These results compare favorably with the level of glycemic control in the 3 months before implementation of the GlucoStabilizer program.

**Conclusions:** Use of the GlucoStabilizer program in the ICU resulted in improved glycemic control compared to the previous manually calculated glycemic control protocols.

**Notes:** The Clarian GlucoStabilizer™ is now being commercially marketed by Medical Decisions Network as the MDN-CGST™. For more information, [click here](#).

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