

Sustained Hypoglycemia Reduction with IV Insulin via eGlycemic Management System

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Objective:

Critically ill patients with hyperglycemia are often managed with continuous insulin infusions. Critical Care and step down patients were started on an eGlycemic Management System (eGMS), Glucomander™, to help safely lower hyperglycemia. The eGMS system was put in place in December 2016. Prior analysis, from 12/16 to 10/18, showed low rates of severe hypoglycemia, < 40 mg/dl, with eGMS compared to usual care, 0.02% vs 0.44%, as well as hypoglycemia <70 mg/dl, 0.32% vs 2.44%. Interventions are often difficult to sustain.

Method:

Retrospective comparison of patients with hyperglycemia managed by usual care compared to a similar group placed on eGMS.

Result:

From 10/31/18 to 11/1/19 there were a total of 2028 patients with persistent hyperglycemia, >180 mg/dl. 669 patients (32%) were managed with eGMS and 1359 patients (68%) with hyperglycemia were managed with usual care, including either subcutaneous insulin, no insulin, or a paper insulin protocol. Hypoglycemia rates were lower in patients on eGMS. Severe hypoglycemia, < 40 mg/dl, was 0.01% in patients on eGMS and 0.33%, for usual care. Rates of < 70 mg/dl was 0.30% vs 2.18% for eGMS vs usual care, respectively. Both groups had similar rates of 70-180 mg/dl.

Conclusion:

eGMS system safely lowers blood glucose, with a reduction in hypoglycemia. A similar group of patients managed with usual care experienced higher rates of hypoglycemia. These results have been sustained for almost 3 years.