

Transitioning Insulin Pump Therapy from the Outpatient to the Inpatient Setting: A Review of 6 Years' Experience with 253 Cases

Curtiss B. Cook, M.D., Karen A. Beer, P.A.C., Karen M. Seifert, R.N., Mary E. Boyle, C.N.P., N.P., Patricia A. Mackey, C.N.P., N.P., and Janna C. Castro, B.S.

Abstract

Background:

We reviewed the care of a large cohort of patients with diabetes mellitus on insulin pump therapy who required an inpatient stay.

Methods:

Records were reviewed of patients hospitalized between January 1, 2006, and December 31, 2011.

Results:

A total of 136 patients using insulin pumps had 253 hospitalizations. Mean (standard deviation) patient age was 55 (16) years, diabetes duration was 29 (15) years, and pump duration was 6 (5) years. Insulin pump therapy was continued in 164 (65%) hospitalizations. Adherence to core process measures improved over time: by 2011, 100% of cases had an endocrinology consultation, 100% had the required insulin pump order set completed, and 94% had documentation of the signed agreement specifying patient responsibilities for continued use of the technology while hospitalized. Documentation of the insulin pump flow sheet also increased but could still be located in only 64% of cases by the end of 2011. Mean glucose was not significantly different among patients who remained on insulin pump therapy compared to those for whom it was discontinued ($p > .1$), but episodes of severe hyperglycemia (>300 mg/dl) and hypoglycemia (<40 mg/dl) were significantly less common among pump users. No pump site infections, mechanical pump failures, or episodes of diabetic ketoacidosis were observed among patients remaining on therapy.

Conclusions:

With appropriate patient selection and usage guidelines, most patients using insulin pumps can safely have their therapy transitioned to the inpatient setting. Further study is needed to determine whether this approach can be translated to other hospital settings.

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Author Affiliation: Division of Endocrinology, Mayo Clinic, Scottsdale, Arizona

Abbreviations: (BedGluc_{avg}) bedside glucose average, (CSII) continuous subcutaneous insulin infusion, (HbA1c) hemoglobin A1c, (SD) standard deviation

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Corresponding Author: Curtiss B. Cook, M.D., Division of Endocrinology, Mayo Clinic, 13400 E Shea Blvd, Scottsdale, AZ 85259; email address cook.curtiss@mayo.edu