

Meet the Researchers

The Impact of Continuous Subcutaneous Insulin Infusion, Continuous Glucose Monitoring, and Practice Structure on Clinical Outcomes in Patients with Diabetes.

(1094) The Impact of Continuous Subcutaneous Insulin Infusion, Continuous Glucose Monitoring, and Practice Structure on Clinical Outcomes in Patients with Diabetes

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Participants should be aware of the following financial/non-financial relationships:

Christopher Brighton, PharmD: I do not have any relevant financial / non-financial relationships with any proprietary interests.

Objectives: Background/Objective(s):

The primary objective of this study is to compare time in range as well as percentage for severe hypoglycemia (<50mg/dL) for the three major insulin pump devices (Medtronic, Tandem, and Omnipod). The current literature has shown that IP treatment has led to improvements in glycemic control as well as decreased hypoglycemic events when compared to MDI. From a financial perspective, IP therapy has been associated with an increase in mean annual cost of approximately \$13,000 dollars shared between patients and health insurance (approximately \$3000 dollars more than MDI). As a result, many insurance plans do not allow patients to change between different pumps until a specified period of time which points to a current gap in literature comparing the outcomes using the three major insulin pumps. Given that patients typically sign a long-term agreement, it warrants information on which pumps may suit patient's best and which ones will provide the best outcomes.

Methods:

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This is a retrospective chart review that will analyze approximately 300 diabetic patients from a combination of three primary care offices between the years of 2015 to 2021. Individual patients will be analyzed from the most recent 12 months of insulin pump utilization. The primary outcome measure is to compare percent time in range and percent experiencing hypoglycemia among the three pump manufacturers. . Eligible patients include type1 or type 2 diabetes patients who are using an insulin pump within the study period. Patients will be excluded if they were pregnant during the study period or if they use an insulin pump device without a continuous glucose monitor. Patient's charts will be analyzed as well as cloud-based pump report sites including: CareLink (for patients on Medtronic pumps), T-connect (for patients on Tandem pumps), and Glooko (for patients on Omnipod pumps). Secondary objectives for this study include: 1) comparing outcomes (time in range/percent severe hypoglycemia) for patients who are managed by pharmacist/endocrinologist collaboration versus pharmacist/PCP collaboration, 2) factors associated with clinical pump failure including but not limited to infusion set replacement frequency, time CGM worn, number of correction boluses per day, insurance coverage, zip code, marital status, and appointment frequency.

Results:**Results:**

A total of 300 patients charts from 2015 through August 31st 2021 will be reviewed analyzed in order to determine if there is a significant difference in outcomes between the three study groups. Comparative analysis for the primary objective will be completed using ANOVA statistical tests. This study is currently in progress and results have not been produced at the time of abstract submission.

Conclusions: Implications/**Conclusions:**

Insights from this study may provide useful information for wider implementation of insulin pumps in specific populations yielding to better outcomes. If successful, this research will contribute to the existing knowledge base by providing literature on ways to potentially optimize clinical outcomes for patients, practice management, and healthcare related costs.