Blood Glucose Levels of Diabetic Patients in the Immediate Post Acute Hemodialysis Period: An Exploratory Study
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INTRODUCTION
- No published evidence of best practice for testing capillary glucose after acute hemodialysis.
- Two different hospitals in single systems using two different practices.
- No community consensus
- Purpose: establish the evidence on which to base procedures for evaluating capillary blood glucose levels after hospitalized diabetic patients complete hemodialysis treatment.
- Secondary research questions were: 1) Are changes in blood glucose similar between patients with diagnosed Type I and Type II diabetes? And 2) Are changes in blood glucose different depending on the reasons for acute care hospitalization, e.g. sepsis vs. surgery, vs. other diagnosis?

METHODS
Predictor variables: type of diabetes; meds prior to dialysis; food prior to dialysis; length of dialysis; treatment; snack during dialysis; prior dialysis during same hospitalization.
Outcome variables: Glucose levels at 4 time points:
- T1: 30 minutes prior to the end of dialysis; sample taken from dialysis catheter/port
- T2: At the end of dialysis; sample taken from dialysis catheter/port
- T3: 30 minutes after the end of dialysis; finger stick sample
- T4: 60 minutes after end of dialysis; finger stick sample

RESULTS
- Only the difference in glucose levels between T1 and T4 (within patient) was statistically significant (p=.0096)
- VARIABILITY IN GLUCOSE LEVELS MOST STRIKING AT T4
- Additional findings: 1) Possible relationships between both insulin administration prior to treatment and length of treatment, on post-dialysis glucose levels. 2) Intra-patient correlations of treatments found each treatment is an independent event (r=0.12) making treatments, not patients, the appropriate unit of analysis.

DISCUSSION
From a clinical perspective, it makes most sense to test glucose when variability is greatest, i.e. 60 minutes post-dialysis, and nursing procedures are being revised to reflect these findings.
- The study has been extended to accrue sufficient numbers of treatments to confirm preliminary results
- Clinical staff felt empowered to change practice based on evidence they collected

CONCLUSIONS
- Diabetic patients exhibit a wide range of glucose levels before, during, and after acute hemodialysis.
- Testing post-dialysis glucose levels earlier than 60 minutes post-treatment may miss needs for additional medication.
- Longer dialysis treatments and insulin dependency may directly affect post-dialysis glucose levels; more research is needed to confirm these findings.
- With support, staff nurses are capable of conducting important clinically based research to establish evidence for practice.

Protocol: Protocol For Patients Requiring Blood Glucose Monitoring (Non-Emergent) After The Completion Of A Hemodialysis Treatment

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