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Title: Glycemic Control

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ACCEPTED

Session Title: Meet the Poster Authors Session
Slot: PST: Friday, March 27, 2020: 2:30 PM-3:15 PM

Abstract Describes: Completed Work/Project

Applicable Category: Students

Keywords: Evidence-Based Practice, Glycemic Management and Nurse-Driven Inpatient Glycemic Protocol

Abstract Summary:
Persistent hyperglycemia is associated with delayed wound healing, limb amputations, surgical site infections, longer recoveries from acute illness and increased mortality. The evidence-based project focused on inpatient glycemic control on the medical/surgical departments aims to increase awareness of hyperglycemic complications and to recommend evidence-based practices including a nurse-driven glycemic protocol.

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Abstract Text:

Purpose: Diabetes mellitus type II is a common comorbidity for adult hospitalized patients. According to CDC (2018), 23.1 million people were diagnosed with diabetes mellitus in 2015, accounting for 7.2% of US population.

Methods: A systematic literature review was conducted to assist healthcare professionals in exploring the impact of hyperglycemia on patient's recovery from acute illness, and to recommend evidence-based practices on the medical/surgical departments. Three quantitative prospective cohort studies that analyzed inpatient hyperglycemia, glycemic management and patient outcomes in the adult population were selected. Additional glycemic guidelines were reviewed from the American Diabetes Association, American Association of Clinical Endocrinologists, American College of Endocrinology, and UpToDate database. The theoretical framework chosen was Lewin's Planned Change Theory that includes three stages: the unfreezing stage, the moving stage, and the refreezing stage.

Results: Targher et al. (2017) studied patient outcomes in patients with heart failure with/without diabetes and found that inpatient mortality and 1-year adverse clinical outcomes were higher in patients with diabetes. Furthermore, elevated blood glucose (BG) levels on admission were associated with increased inpatient mortality in diabetic and nondiabetic patients, and diabetes as a comorbidity was associated with 1.16-fold increased risk of 1-year all-cause mortality, and 1.32-fold increased risk of re-hospitalization (Targher et al., 2017). Showen, Russell, Young, Gupta and Gibbons (2017) studied hyperglycemia and surgical site infections in patients undergoing general and vascular surgeries, and found that preoperative hyperglycemia, BG > 180 mg/dL, was associated with increased rates of surgical site infections. Leite et al. (2010) researched inpatient hyperglycemic management and analyzed the relationship between glycemic levels and patient outcomes. Hyperglycemia, BG > 180mg/dL, was associated with increased length of stay, more frequent ICU admissions and increased mortality (Leite et al., 2010). In addition, Leite et al. (2010) found that hyperglycemia

was mostly addressed when blood glucose levels were above 200 mg/dL, and that a well-designed algorithm to guide healthcare practitioners in targeting adequate glycemic levels was not existent.

Conclusion: Persistent hyperglycemia is a significant clinical problem that complicates adult patient's recovery from acute illness. Healthcare practitioners can improve the inpatient glycemic management through the use of a nurse-driven inpatient glycemic protocol to timely assess and address inpatient hyperglycemia. Furthermore, it is indicated that healthcare practitioners aim for preprandial BG < 140 mg/dL and for random BG < 180 mg/dL on the medical/surgical departments to prevent persistent hyperglycemia. Healthcare practitioners can use patient's home medication regimen when glycemic targets are met if there are not any contraindications to continuation of patient's pre-admission regimen, or healthcare practitioners can use instead a long acting insulin, preprandial scheduled rapid acting insulin, and a preprandial correction scale rapid acting insulin to treat elevated blood glucose levels.