Introduction

Lenox Hill Hospital is a comprehensive acute care hospital facility located in New York City. It is recognized nationally for its outstanding patient care, as well as its innovative medical/surgical modalities.

To improve the health and quality of life for the people and communities we serve by providing world-class service and patient-centered care.

Our Values

Excellence Integrity Caring Integrity

Method

An interprofessional collaborative effort, based on evidenced based studies (DeSalvo, Greenberg, Henderson, & Cogen, 2012; Myers, Zilch & Rodriguez, 2013) developed and sought to pilot a hyperglycemic crises protocol on the critical care units that facilitated an appropriate and timely management of patients presenting with DKA or HHS. Such interventions contribute to length of stay reductions and associated complications of an ICU admission. Every effort to restore patients to diabetic control must be advocated for. Immediate efforts to address this injurious practice were necessitated prior to patient harm occurrence.

Using an interdisciplinary team, for consideration, input, approval and stakeholder buy-in. The Chief Nursing Officer strongly advocated for clarification regarding scope of practice regarding IV insulin titration, by registered nurses, in the ICU setting. As a result, the New York State Office of Professional Licensure indicated that these tasks are definitely within critical care nurses scope of practice when accompanied by the facility to achieve the overall goal of decreased length of stay – which facilitated availability of precious ICU beds for other patients that warranted a higher level of care and decreased incidence of hypoglycemia in DKA or HHS patients admitted to the ICU. Ongoing education and competency evaluation is maintained annually via skills fairs, briefs, and huddles.

Definitions

DKA is characterized by hyperglycemia, ketonuria/ketonemia, acidosis and volume depletion. The diagnosis of DKA should be made based on the 3 of the 4 following criteria:

a. hyperglycemia (usually > 600 mg/dL)

b. ketonuria (usually > 50 mmol/L)

c. hypokalemia (serum K < 3.5 mEq/L)

d. altered mental status

HHS is characterized by:

a. hyperglycemia (usually > 250 mg/dL)

b. hyperosmolality (serum osmol > 320 mOsm/kg)

c. altered mental status

d. normal pH and serum bicarbonate > 15 mEq/L

e. small anion gap

Methods

To be a national health care leader, committed to excellence, compassion and improving the health of the community.

Our Mission

To improve the health and quality of life for the people and communities we serve by providing world-class service and patient-centered care.

Our Vision

Diabetic ketoacidosis (DKA) and Hyperosmolar hyperglycemic state (HHS) are medical emergencies associated with increased morbidity, mortality and healthcare costs (Joslin, 2013). Prompt identification and proper management of these emergencies are imperative to improve patient outcomes and prevent death (Sanza, et al., 2009). Intravenous (IV) insulin is adopted for treatment of hyperglycemia in the critical care setting (DeSalvo, Greenberg, Henderson, & Cogen, 2012; ADA, 2017; Kreider & Lien, 2015). Its use is recommended for positive clinical outcomes however the risk of hypoglycemia and its accompanying negative sequelae are inherent. IV insulin drips necessitate enhanced critical thinking skills, vigilant monitoring of lab values, titration of fluid, electrolytes and insulin.

Results

An interprofessional collaborative effort, based on evidenced based studies (DeSalvo, Greenberg, Henderson, & Cogen, 2012; Myers, Zilch & Rodriguez, 2013) developed and sought to pilot a hyperglycemic crises protocol (on the critical care units) that facilitated an appropriate and timely management of patients presenting with DKA or HHS. Such interventions contribute to length of stay reductions and associated complications of an ICU admission. Every effort to restore patients to diabetic control must be advocated for. Preliminary hyperglycemic crises protocol drafts, piloted on critical care units, required nursing estimation for insulin titration thus impacting accuracy and patient safety. This latter practice could have had the potential to cause nurses to erroneously administer IV insulin drips. Immediate efforts to address this injurious practice were necessitated prior to patient harm occurrence.

This hyperglycemic crises protocol was presented to the nursing critical care collaborative council, an interdisciplinary team, for consideration, input, approval and stakeholder buy-in. The Chief Nursing Officer strongly advocated for clarification regarding scope of practice regarding IV insulin titration, by registered nurses, in the ICU setting. As a response, the New York State Office of Professional Licensure indicated that these tasks are definitely within critical care nurses scope of practice when accompanied by the facility to achieve the overall goal of decreased length of stay – which facilitated availability of precious ICU beds for other patients that warranted a higher level of care and decreased incidence of hypoglycemia in DKA or HHS patients admitted to the ICU. Ongoing education and competency evaluation is maintained annually via skills fairs, briefs, and huddles.

Conclusion

References

References:


Use Of A Conversion Table Towards Safe Implementation Of A Hyperglycemic Crises Protocol

Renee Murray-Bachman, Ed.D, MSN, CDN, RN, CDE, CPT ;Deirdre O’Flaherty, DNP, RN, NE-B, APRN-BC, ONC

Seon Lewis-Holman, DNP, ACNS-BC; Shawanda M. Patterson MA, RN, AGPCNP-BC, CCRN;

Simone Ashman, MA, RN

Seon Lewis-Holman, DNP, ACNS-BC; Shawanda M. Patterson MA, RN, AGPCNP-BC, CCRN;