

MSHP Abstract

Title: Assessment of the effectiveness of subcutaneous insulin in the management of hyperglycemia in the intensive care unit at Mercy Hospital Springfield.

1. Background:

The current standard of practice at Mercy Hospital Springfield in the management of hyperglycemia in intensive care unit (ICU) patients is with subcutaneous (SQ) insulin. The use of an intravenous (IV) insulin infusion protocol (IIP) is recommended by The American Diabetes Association (ADA) and The American Association of Clinical Endocrinologists (AACE) in the place of SQ insulin, despite limited evidence of comparison between them. In the 2019 study, Intravenous Insulin Infusion Protocol Compared With Subcutaneous Insulin for the Management of Hyperglycemia in Critically Ill Adults, it was displayed that patients treated with IIP were able to achieve better blood glucose (BG) control and lower occurrence of hypoglycemia compared with SQ insulin regimens. The primary purpose of this study is to assess the effectiveness of Mercy Hospital Springfield SQ insulin use in the management of hyperglycemia in the ICU.

2. Methods:

This retrospective chart review will evaluate 255 patient records from January 1st, 2019 to January 31st, 2020 of patients admitted to Mercy Hospital Springfield Intensive Care Units (ICU). Adult patients admitted to the ICU with two or more instances of hyperglycemia (BG>140mg/dL), receiving SQ insulin will be included. Patients will be excluded if: admitted with DKA or HHS, primary diagnosis of psychiatric event, pregnant, or only experienced one or less glycemic event. The primary endpoint will be the number of composite glycemic events (BG>140 or BG<70) experienced by ICU patients that are receiving SQ insulin. Secondary endpoints will include: cost difference between the use of SQ and IV insulin, average BG range maintained, amount of adverse events experienced by patients due to glycemic events, amount of patients receiving SQ insulin with risk factors for the use of SQ insulin, glycemic events in patients receiving only sliding scale insulin, and time required in order to correct patient's BG levels. All data will be analyzed using descriptive statistics to determine effectiveness of SQ insulin in the management of hyperglycemia in the ICU at this institution. This study has been submitted to the International Review Board for review.

3. Results:

Research in Progress.

4. Conclusions:

Research in Progress.