

The Use of a Clinical Pathway in the Management of Adult Patients with Diabetic Ketoacidosis and Hyperglycemic Hyperosmolar State at a Private Tertiary Hospital in the Philippines: A Retrospective Cross-Sectional Comparative Study

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Diabetic ketoacidosis (DKA) and hyperglycemic hyperosmolar state (HHS) management in the inpatient setting continues to pose a challenge for healthcare providers. The use of clinical pathways is advocated worldwide but is still not widely accepted in our local setting. In 2010, The Medical City (TMC) Section of Endocrinology developed a clinical pathway for hyperglycemic crises based on the 2010 ADA recommendations and Markovitz insulin protocol. This retrospective cross-sectional study compared the clinical and safety outcomes of a clinical pathway in DKA and HHS management among adult patients admitted from January 2010 to April 2016. A total of 95 patients were divided into 2 groups: pathway group (n=60) and non-pathway group (n=35). Outcomes such as duration of insulin drip, time to reach CBG goal, number of hypoglycemic events, length of ICU stay, and length of hospital stay were similar between the two groups. Patients in the pathway group had significantly more hypokalemic events compared to the non-pathway group (54.2% vs. 28.6%, $p=0.019$). This increased occurrence of hypokalemia may be due to the significantly higher insulin dose per patient in 24 hours (90.5 ± 6.1 vs. 69.4 ± 7.6 , $p = 0.036$). Mortality was significantly higher in the non-pathway group (0 vs. 8.6%, $p=0.047$). Direct causality of mortality was not determined in this study. In conclusion, this study shows that DKA and HHS patients managed using a clinical pathway had lower mortality rates compared to those managed without a pathway. However, there was an increase in hypokalemic events in the pathway group.