COVID-19 Study Shows More than 4 Times In-Hospital Mortality Rate and Increased Length of Stay for Patients with Diabetes and Hyperglycemia

April 17, 2020 8:01AM ET


Business Wire

WALTHAM, Mass. -- April 17, 2020

Glytec, the only provider of insulin management software across the continuum of care, today published an observational study on the impact of diabetes and uncontrolled hyperglycemia in hospitalized COVID-19 patients. The peer-reviewed study, published in the Journal of Diabetes Science and Technology, found that the combined patient groups of individuals living with diabetes, those with A1C ≥ 6.5% and those experiencing hyperglycemia throughout their stay had an in-hospital mortality rate of 29%, more than four times higher than patients without diabetes or hyperglycemia (6%). Even more alarming, 42% of patients who had no evidence of diabetes prior to being admitted, and developed hyperglycemia during their stay, died in the hospital. This represents a mortality rate seven times higher than patients without diabetes or hyperglycemia.

The study evaluated 1,122 COVID-19 patients between March 1 and April 6, 2020 using data transmitted to the Glytec database from 88 hospitals in 11 states, representing all four major U.S. regions. All patients had a laboratory-confirmed diagnosis of COVID-19 and 451 patients (40%) were designated as having diabetes, hyperglycemia or A1C ≥ 6.5%. For this study, hyperglycemia was defined as two or more blood glucoses > 180 mg/dl within any 24-hour period after admission.

“The Coronavirus outbreak has stretched our hospitals and health systems to a point we’ve never experienced before, so it’s understandable that glycemic management may not have been a major point of focus thus far,” said Bruce Bode, MD, FACE, diabetes specialist at Atlanta Diabetes Associates and Adjunct Associate Professor of Medicine at Emory University School of Medicine. “This research confirms that diabetes is an important risk factor for dying from COVID-19. It also suggests that patients with acutely uncontrolled hyperglycemia – with or without a diabetes diagnosis – are dying at a higher rate than clinicians and hospitals may recognize. It is paramount that we treat hyperglycemia in COVID-19 patients as directed by national guidelines, with subcutaneous basal-bolus insulin in most non-critically ill patients, and with IV insulin in the critically ill.”
In addition to significantly higher mortality rates, the study also documented data on increased lengths of stay and challenges managing blood glucose levels for hospitalized COVID-19 patients. Among the 493 patients who survived to discharge, the combined diabetes and uncontrolled hyperglycemia patient group experienced a significantly longer median length of stay (5.7 days) compared with patients without diabetes or hyperglycemia (4.3 days). In addition, diabetes and hyperglycemia patients spent 38% of hospital days with an average blood glucose above the American Diabetes Association’s recommended upper limit of 180 mg/dl for most inpatients.

“This initial analysis provides what we believe are new insights into the COVID-19 illness and suggests an opportunity exists for clinicians to save additional lives by intervening in acutely hyperglycemic patients to achieve guideline-directed glycemic targets,” said Valerie Garrett, MD, MPH, Glytec’s Executive Director of Quality Initiatives. “While glycemic care may not be top of mind in clinicians caring for patients with COVID-19, it appears to be a potentially very important aspect of care. We’re proud of Glytec’s ability to participate in important areas of research with our clinical partners and focus our analytics capability on revealing insights that can significantly improve patient care.”

While the World Health Organization has published data on COVID-19 fatality rates for patients with comorbid conditions including cardiovascular disease (13.2%), diabetes (9.2%) and hypertension (8.4%) – compared to 1.4% for patients with no comorbid condition – this is the first research to demonstrate that acutely hyperglycemic patients hospitalized with COVID-19, irrespective of diabetes diagnosis, have a higher mortality rate than patients without hyperglycemia. With up to one-third of all hospital patients experiencing hyperglycemia due to issues ranging from diabetes, stress and other factors, data from this research provides valuable insights for health systems to consider as they care for a surge of COVID-19 patients.

“These data may have wide implications for how we care for COVID-19 positive patients who experience hyperglycemia during their hospital stay or who have already been diagnosed with diabetes. I am pleased to be working with Atlanta Diabetes Associates and Glytec on this publication,” said senior author David Klonoff, MD, Medical Director of the Diabetes Research Institute, based at Mills-Peninsula Medical Center, part of Sutter Health. “I intend to pursue additional studies which will assess the association between longitudinal glycemic control across a hospital stay among COVID-19 positive patients.”

The full, submitted paper detailing Glytec’s research can be downloaded here. For additional information on important factors relating to insulin management and COVID-19, visit Glytec’s COVID-19 resource page.

**About The Journal of Diabetes Science and Technology**
Journal of Diabetes Science and Technology (JDST) is a bi-monthly, peer-reviewed scientific journal published by Diabetes Technology Society (DTS). JDST covers scientific and clinical aspects of diabetes technology, the development and use of mobile applications and wireless communication, as well as bioengineered tools. Articles cover both basic research and clinical applications of technologies being developed to help people with diabetes. JDST is a member of the Committee on Publication Ethics (COPE). For more, visit https://journals.sagepub.com/home/dst.

About Glytec

Glytec is the insulin management software company for healthcare providers focused on improving the quality and cost of care. Its FDA-cleared titration software and proprietary algorithms power the only solution capable of delivering personalized diabetes treatment recommendations across the continuum of care, from hospital to home. With ongoing support from its team of doctors, nurses and technologists headquartered outside of Boston, Glytec improves outcomes and controls costs for the large population of patients requiring insulin treatment – including those with and without a diagnosis of diabetes. For more information, follow Glytec on Twitter (@Glytec) or LinkedIn, or visit www.GlytecSystems.com.

Dr. Klonoff has no financial ties to Glytec and Sutter Health is not a customer of Glytec products.

View source version on businesswire.com:

Contact:
Media:
Jason Vancura
fama PR for Glytec
617-986-5016
Glytec@famapr.com