Implementation of 2020 ADA Recommendations for the Initial Management of Overweight and Obese Pediatric Patients with New Onset Diabetes

Atima Huria, MS4, Brody School of Medicine, LINC Scholar; Jennifer Sutter1, MD, ECU Pediatric Endocrinology; Kaitlin Hamilton, PA-C, ECU Pediatric Endocrinology; Mindy Saenz, RDN, LDN, CDCES, ECU Pediatric Specialty Care

Introduction:
Historically, ECU Pediatric Endocrinology admitted most patients with new onset diabetes to the hospital and initiated full basal-bolus (intensive) insulin regardless of age, weight and likelihood of Type 2 diabetes (T2D). While the 2020 guidelines recommend that initial therapy for overweight and obese patients with new onset diabetes should address hyperglycemia and metabolic derangements, the guidelines also suggest that less intensive treatment regimens initiated in the outpatient setting may achieve target HgbA1c in patients with presumed T2D. Thus, our previous management strategies may have led to unnecessary hospitalizations with overly intensive insulin regimens.

Project Aim: We aimed to standardize the initial management of overweight/obese patients 10 to 17 years of age with new onset diabetes cared for by ECU Pediatric Endocrinology over an 18-month period such that our practice aligned with the 2020 ADA recommendations with the goal to:
1. Decrease hospital admission rates at the time of diagnosis from 67% as determined by retrospective review to 40%.
2. Decrease percentage of patients receiving intensive insulin at diagnosis from 66% as determined by retrospective review to 20%.

Standardized Protocol

Results: Administration Rates at Diagnosis

Results: Adherence to Protocol

Results: Insulin Intensity at Diagnosis

Results: Unanticipated Factors

Discussion:
• In the first 6 months following protocol implementation, admission rates and use of intensive insulin remained high peaking in the first quarter of 2021. This was likely due to higher metabolic acuity at presentation, adherence to the protocol for admission at diagnosis has steadily increased. Overall, this had led to a decrease in admission rates to 30% and use of intensive insulin to 23% in the past quarter, approaching our aims.
• The protocol appears safe with only one episode of metabolic deterioration requiring admission to the hospital noted among patients with Type 2 Diabetes who were not initially admitted (1/56). There were no episodes of metabolic deterioration noted in patients ultimately diagnosed with Type 1 Diabetes.

Next Steps:
We plan to follow patients for 2 years post diagnosis documenting factors that impact achievement of target A1c, changes to treatment regimens and changes to other metabolic parameters such as BMI. Our global aim is to improve diabetes control and decrease complication rates for children and adolescents with T2DM in Eastern North Carolina.

Acknowledgements:
We would like to thank the TQA and LINC Scholars leadership, the ECU Physicians Pediatric Diabetes Team and Dr. Dmitry Tumin for their guidance, support and participation in this project.