

directly, elevated HbA_{1c} (>10.0%/13.4mmol/L), and altered mental status were associated with increased risk of DKA on multivariable analysis. **Conclusion:** There were no fluctuations in the rate of DKA among pediatric patients newly diagnosed with T1D throughout the COVID-19 pandemic in central Pennsylvania. Interestingly, some geographic locations observed an increased frequency of DKA in children newly diagnosed with T1D, while others noted a decreased rate. Regardless, our findings suggest previously described predictors of DKA in the pediatric population persist, even in the setting of the COVID-19 pandemic.

Pediatric Endocrinology

DIABETES, INSULIN, AND LIPIDS IN PEDIATRIC ENDOCRINOLOGY

Insulin Basal Dose Is Associated With Better Metabolic Control in Type 1 Diabetes Children and Adolescents

Abril Arellano-Llamas, MD, Luz Elena Mejía-Carmona, Dr, Alicia Rojas-Zacarias, Dr, Oscar Ochoa-Romero, MD, Irene Díaz-Rodríguez, Dr
INSTITUTO MEXICANO DEL SEGURO SOCIAL, Mexico city, Mexico.

Basal insulin dose in type 1 diabetes has been established empirically, since 2011 all guidelines suggest insulin basal dose less than 50% of total insulin dose in the pediatric population. However, in real life, basal dose indication has not changed in all patients in the basal-bolus treatment scheme. **Objective:** To measure how the physician indicates in real-life basal insulin dose in pediatric patients with type 1 diabetes in the basal-bolus scheme, and correlate this dose with metabolic control measured by glycated hemoglobin. **Methods:** This was a retrospective study, subjects include pediatric T1D (2 to 16 years, non-obese, using insulin more than 0.3 UI/Kg/d), more than 1 year of diagnostic, none of them in ketoacidosis, attended during 2019. The protocol was revised and accepted in the institution. Data were analyzed with Kruskal-Wallis, U Mann Withney, Pearson correlation test. **Results:** There were 141 subjects, male (51%), median age 13.3 years (3.6-15.9), median evolution time since diagnosis 8 years (1-14), pre-pubertal (Tanner stage 1, 22%), total daily dose 1.02 UI/Kg/d (0.3-2.19 UI/Kg/d). Basal insulin was glargine 50.4%, and NPH 49.6%, prandial insulin was lispro 66.7%, and regular human 29.8%. Children using 50% or less basal insulin of total insulin dose was 40.4%. The basal dose was 38% of total insulin dose in children less than 6 years, and 59% in children older than 6 years. ($p=0.033$). Glycated hemoglobin was less than 7.5% in 12.8%. The persons with glycated hemoglobin less than 7.5% used less basal insulin 0.38 u/kg/d, than those with higher glycated hemoglobin 0.57 U/kg/d ($p=0.02$) with no impact in total insulin dose (0.86 vs 1.05 UI/Kg/d, $p=0.129$). The correlation of the percentage of insulin basal dose and glycated hemoglobin was 0.279, $p=0.001$, meaning, more basal insulin, worse diabetes control. **Conclusion:** Lower basal insulin dose percentage from total daily dose is associated with better metabolic control in children treated with the basal-bolus scheme. There is high clinical inertia in the indication of basal insulin in older children.

Pediatric Endocrinology

DIABETES, INSULIN, AND LIPIDS IN PEDIATRIC ENDOCRINOLOGY

Insulin Growth Factor 1 Predicts Central Precocious Puberty in Girls 6 to 8 Years-Old: A Retrospective Study

Patricia Diaz Escagedo, MD¹, Cheri L. Deal, MD, PhD, FRCPC, FAAP², Andrew Dwyer, PhD, FNP-BC³, Michael Hauschild, MD⁴.
¹CHU Sainte Justine University Hospital Center/Université de Montréal, Montreal, QC, Canada, ²Université de Montréal/Research Center CHU Sainte-Justine, Montreal, QC, Canada, ³Boston College, Newton, MA, USA, ⁴Hopital de l'Enfance, Lausanne, Switzerland.

Background: Central precocious puberty (CPP) in females is characterized by thelarche before 8 years of age. Evidence of reproductive axis activation confirms the diagnosis (basal serum LH \geq 0.3 IU/L or luteinizing hormone-releasing hormone (LHRH)-stimulated LH \geq 5 IU/L. Stimulation testing is the diagnostic gold standard but is time-consuming and costly. Serum levels of insulin-like growth factor-1 (IGF-1) and insulin-like growth factor-binding protein 3 (IGFBP-3) are increased in girls with CPP. **Objective:** To assess the utility of serum IGF-1 and IGFBP-3 in identifying CPP in girls aged 6 to 8 years old. **Methods:** The study was a single-center retrospective study. Girls with confirmed CPP (n=44) and isolated premature adrenarche/thelarche (PA/PT, n=16) had baseline biochemical profiling and LHRH stimulation testing. Serum IGF-1 and IGFBP-3 results were converted to standard deviation scores (SDS). Correlations were calculated and receiver operating characteristic curves were plotted. **Results:** Girls with CPP had higher basal and peak LH, IGF-1 SDS, and growth velocity ($p<0.05$). IGF-1 SDS correlated positively with basal and peak LH ($p<0.05$). IGF-1 SDS (1.75-2.15) differentiated CPP and PA/PT with 89% sensitivity and 56% specificity (basal LH) and 94% specificity and 55% sensitivity (peak LH). IGFBP-3 SDS did not differ between groups or by CPP parameters. **Conclusions:** In clinical practice, IGF-1 SDS may be an additional tool for identifying CPP in girls aged 6 to 8 years-old when baseline clinical and laboratory diagnostic criteria are inconclusive, possibly avoiding more invasive procedures.

Pediatric Endocrinology

DIABETES, INSULIN, AND LIPIDS IN PEDIATRIC ENDOCRINOLOGY

Investigating Insulin Resistance in Pediatric Cardiomyopathy - A Pilot Study

Daniel Mak, MD, Kaitlin A. Ryan, MD, Joan C. Han, MD.
University of Tennessee Health Science Center, Memphis, TN, USA.

Children with cardiomyopathy are a vulnerable population and understanding the factors that contribute to cardiac dysfunction are of great importance. At the biochemical level, energy utilization by cardiomyocytes during stress may provide insight into the progression of cardiomyopathy. There is a large body of literature that describes insulin resistance in adults with cardiomyopathy (1,2).