examination and dental probing following WHO guidelines to derive DMFT/DMFS indices. Differences in caries metrics between subjects with diabetes and controls were assessed using chi-squared tests or the Mann Whitney U test.

Results Fifty-seven children and adolescents without diabetes and 42 children and adolescents with poorly-controlled (HbA1c≥7.5) diabetes were recruited. Overall, the median (IQR) DMFT index was 4 (5) (moderate) and the DMFS index was 4 (11). There were no significant differences in DMFT% [14.0 (21.5) vs.13.0 (20.0); p = 0.602], DMFT index [4 (5) vs. 3 (6); p = 0.749], nor DMFS index [5 (12) vs. 4 (11); p = 0.484] between diabetic patients and controls, respectively.

Conclusion(s) This is the first study of the relationship between diabetes and dental caries conducted in the UAE. Diabetes either has no effect on caries risk or its effect is so small that it can be masked by other dominant risk factors such as diet and obesity that still require addressing through coordinated public health measures.

23 TIME TREND AND POTENTIAL RISK FACTORS FOR CELIAC DISEASE DEVELOPMENT IN CHILDREN WITH TYPE 1 DIABETES MELLITUS: 10-YEAR SINGLE CENTER EXPERIENCE IN THE EMIRATE OF ABU DHABI- UAE

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Background Celiac disease (CD) is an important association with type 1 diabetes (T1DM) with a significant impact on growth and glycemic control. The frequency of coexistence of T1DM and CD is widely described, ranging from 2.5 to 16.4% in 23 studies worldwide, much greater than the general population risk of 1%. The risk of CD is higher among younger children (less than 4 years), females and during the first few years of T1DM diagnosis.

Aim of Study

1. Describe the demographic and clinical characteristics of children with CD with an underlying diagnosis of T1DM
2. Estimate incidence and time trend of CD diagnosis among children with T1DM
3. Evaluate for potential factors that might increase the risk of development of CD among T1DM

Methods A retrospective chart review of EMR of children (age 1–18 years) with T1DM who attended the paediatric endocrine clinic during the period 2010–2021.

Results 898 patients with T1DM were identified during the study period. 93 of them developed CD during the study period, with an incidence of CD among our study cohort of 10.4%. The female gender represents 52.7% of them. The mean age at CD diagnosis was 8 ± 3.5 years, with the average duration of diabetes of 2.9 years ± (2.8) before CD diagnosis. The majority (64.5%) were asymptomatic for CD and were identified through routine screening. Among T1DM with CD majority (83%) developed CD over the first 5 years of T1DM diagnosis. All children with the coexistence of CD and T1DM had positive serology for CD, 79.5% underwent endoscopic duodenal biopsy, and 90.5% of them showed villous atrophy. In our cohort, we were able to identify risk factors for developing celiac disease which includes: Age ≤ 8 years at the time of T1DM diagnosis (P=0.003) and positive family history of CD (P=0.001). The coexistence of autoimmune thyroid disorder (AIDs) and gender were not significant predictors of developing CD in our cohort (P=0.056) and (P=0.92) respectively.

Conclusion(s) The incidence of CD among children with T1DM in our setting is 10.4%; comparable to the regional & international studies. The estimated cumulative risk of CD is significantly higher in younger children and those with a positive family history of CD. The majority (64%) were asymptomatic for CD and identified through routine screening. More than two third of children with CD were diagnosed during the first 5 years of T1DM diagnosis. These findings support the importance of implementing routine CD screening among children with T1DM to reduce the risk of potential health-related consequences of undiagnosed CD.

24 IMPACT OF VITAMIN D AND CALCIUM SUPPLEMENTATION ON INSULIN SENSITIVITY PARAMETERS: A PILOT STUDY IN A POPULATION OF OBESE AND PREPUBESCENT NORTH-AFRICAN CHILDREN

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Background Obesity has a strong influence on T2D in children and adolescents, by increasing the insulin resistance and damaging β-cell function. A growing number of studies suggest a link between vitamin D and type 2 diabetes

Aim of Study This study aimed to determine the impact of vitamin D and calcium supplementation on pancreatic β-cells function in terms of insulin secretion and sensitivity.

Methods This was a quasi-experimental study involving 30 obese and prepubescent Tunisian children (57% boys). During three months, the children received calcium and vitamin D supplementation at therapeutic doses. An oral glucose tolerance test (OGTT) was performed at the beginning and at the end of the study. The following metabolic definitions were applied: i) hyperinsulinism: insulinemia sum > 300 µ UI/ml during OGTT, ii) insulin-resistance: homeostatic model assessment of insulin- resistance > 2, iii) normal glycaemic profile: normal plasma levels during OGTT without any spike, and iv) pancreatic β-cells dysfunction reversibility: disappearance of the aforementioned disorders

Results The means ± standard-deviation of age and body mass index were 10.87 ± 1.9 years, and 30.17 ± 4.99 kg/m2, respectively. As risk factors, we identified a family type 2 diabetes in all cases, and family obesity in 48.57%. All the children had hypovitaminosis D, with insufficiency in 77.1% cases and deficiency in 22.9%.

Moreover, all of them were at the stage of hyperinsulinism associated with insulin-resistance. These disturbances were noted even in children having a normal glycaemic profile at OGTT. After calcium and vitamin D supplementation, glycaemic profile as well as insulin-secretion improved significantly (p < 0.0001). Hyperinsulinism and insulin-resistance decreased significantly by 56.67% (p < 0.0001) and 70.00% (p < 0.0001), respectively. Complete reversibility of these two disorders was noted in 26.6% of children

Conclusion(s) To conclude, in obese and prepubescent children, vitamin D and calcium supplementation led to the reversibility of the pancreatic β-cells dysfunction.

25 ESTIMATED COST-EFFECTIVENESS OF SUBCUTANEOUS INSULIN ASPART IN THE MANAGEMENT OF MILD DIABETIC KETOACIDOSIS AMONG CHILDREN

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Background Intravenous(IV)insulin infusion is the standard of care for treating diabetic ketoacidosis (DKA) worldwide. Subcutaneous (SC) insulin aspart could decrease the use of health care resources.

Aim of Study To compare the cost-effectiveness of mild uncomplicated DKA management with SC insulin aspart vs IV insulin infusion among pediatric patients from the perspective of a public health care payer using clinical data.

Methods This economic evaluation included children aged 2 to14 years presenting to the emergency department of a single academic medical center with mild DKA between January 1, 2015, and March 15, 2020. The medical records for DKA treatment course and its associated hospitalization costs were reviewed. Data were analyzed from January 1, 2015, to March 15, 2020.

Results A total of 129 children with mild DKA episodes (mean[SD]age,9.9[3.1] years;72girls [55.8%]) were enrolled in the study. Seventy children received SC insulin aspart and 59 received IV regular insulin. Overall, the length of hospital stay in the SC insulin group was reduced (mean, 16.9 [95% CI, −31.0 to −2.9] hours) compared with the IV insulin group (P = .005). The mean (SD) cost of hospitalization in the SC insulin group (US $1071.99 [US $523.89]) was less than that in the IV insulin group (US $1648.90 [US $788.03]; P = .001). The incremental cost-effectiveness ratio was −34.08 (95% CI, −25.97 to −129.82) USD/h. The use of SC insulin aspart was associated with a lower likelihood of prolonged hospital stay (β = −17.22 [95% CI, −32.41 to −2.04]; P = .03) than IV regular insulin when controlling for age and sex.

Conclusion(s) Findings of this economic evaluation suggest that SC insulin aspart is dominant vs IV regular insulin in the management of mild uncomplicated DKA in children.

26 INSULIN-INDUCED LIPODYSTROPHY AND PREDISPOSING FACTORS IN CHILDREN AND ADOLESCENTS WITH TYPE 1 DIABETES MELLITUS (T1DM) IN A TERTIARY CARE EGYPTIAN CENTER

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Background Lipodystrophy (LH) is one of the most common complications of subcutaneous insulin injection. Many factors are incriminated in the evolution of LH in children with diabetes type 1 (T1DM). LH may affect insulin absorption in skin areas involved, resulting in negative impact on blood glucose levels and glycemic variability.

Aim of Study the aim to study Insulin-induced lipodystrophy and predisposing factors in children and adolescents with type 1 diabetes mellitus (T1DM) in a tertiary care Egyptian center

Methods We calculated evaluated the prevalence of LH in relation to possible clinical factors associated with the development of LH in a cohort of children (n =115) with T1DM using insulin pens or syringes and we studied possible predisposing factorsincluding their age, duration of T1DM, injection technique, insulin dose/kg, degree of pain perception, and HbA1c level.

Results In our cross-sectional study, 84% of patients were using pens for insulin injection and 52.2% of them were rotating the site of injec-tion on daily basis. 27% did not experience pain during injection while 6% had the worst hurt. 49.5% had clinically detectable LH. Those with LH had higher HbA1c level and more unexplained hypoglycemic events compared to those without LH (P: 0.058). The hypertrophied site was related to the preferred site of injection which was the arms in 71.9% of the cases. Children who had LH were older with longer duration of T1DM, rotating sites of injection less frequently and were more frequently reusing needles compared to children with-out LH (P: < 0.05).

Conclusion(s) Improper insulin injection technique, older age, and longer duration of T1DM were associated with LH. Proper education of patients and their parents must include correct injection tech- niques, rotating injection sites, and minimal reuse of needles.

27 METABOLIC SYNDROME IN OBESE CHILDREN OVER FIVE YEARS OLD

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Background Obesity is an important pediatric public health problem associated with increased risk of many complications in childhood and increased morbidity and mortality throughout adult life.

Aim of Study o assess the prevalence of Metabolic Syndrome in obese children and the relationship between Metabolic Syndrome and Body mass index (BMI), sex, age and family risk factors like obesity, hypertension, diabetes mellitus and cardiovascular disease

Methods An analytic cross-sectional study was conducted in 178 overweight and obese children and adolescents aged 5-16 years old seen at the General Pediatric Clinic of the Tishreen University Hospital between March 2020 and February 2021. Weight, high, waist Circumference and blood pressure were measured. Blood samples were taken after 12 hours fasting and fasting blood glucose (FBG), total cholesterol (T Cho), high- density lipoprotein cholesterol (HDL) and low- density lipoprotein cholesterol (LDL) were measured. The Metabolic Syndrome MS was diagnosed based on pediatric and adolescent criteria adapted from the National Cholesterol Education Program Third Adult Treatment Panel (NCEP-ATP III) definition.