**Introduction** Advanced Hybrid Closed Loop (AHCL) systems provide superior glycemic control in children and adolescents with Type 1 Diabetes (T1D). Current studies included participants with previous pump and Continuous Glucose Monitoring (CGM) experience.

**Objectives** We aimed to study transitioning these patients on Multiple Daily Injections (MDI) without prior pump experience to AHCL systems within a short period, utilizing a structured initiation protocol and the glycemic control they achieved with the MiniMed 780G system.

**Methods** Children and adolescents (aged 7–17 years) with T1D on MDI therapy and HbA1c below 12.5% were recruited in this prospective open label single-arm, single-center study. All participants followed a structured initiation protocol including 4 steps: step 1: AHCL system assessment (1 hour discussion with educator); step 2: AHCL system training (2-hours sessions in 4 consecutive days with groups of 2 to 3 participants and caregivers); step 3: SAP use for 3 days; step 4: AHCL system use for 12 weeks, cumulating in 10 days from MDI to AHCL initiation. The primary outcome of the study was the change in the time spent in target in range (TIR) of 70–180 mg/dl and HbA1c from baseline (MDI + CGM, 1 week) to study phase (AHCL, 12 weeks).

**Results** 34 participants were recruited and all of them completed the 12 weeks study. TIR increased from 42.1±18.7% at baseline to 78.8 ±6.1% in the study phase (p=0.001). HbA1c decreased from 8.6±1.7% (70±18.6 mmol/mol) at baseline, to 6.5±0.7% (48±7.7 mmol/mol) at the end of the study (p=0.001). The participants used the sensor for a median of 96% of the time and spent a median of 90% in AHCL during the 12 weeks. No episodes of severe hypoglycaemia or DKA were reported.

**Conclusions** Children and adolescents with T1D on MDI therapy who initiated the AHCL system following a 10-days structured protocol achieved the internationally recommended goals of glycemic control with TIR >70% and a HbA1c of <7%.

Although the majority of children with diabetes have type 1 other forms of childhood diabetes do exist. Following the rising epidemic of childhood obesity pediatricians started to see more cases of type 2 diabetes and advances in molecular genetics led to identifying some children with diabetes due to single gene defects, the so-called monogenic diabetes. In addition, with the increase in the survival rate of children with cancer and other chronic illnesses cases of secondary diabetes became more prevalent.

The importance of making the correct classification of childhood diabetes is numerous: It could guide the best treatment for diabetes, define the diagnosis in other family members and explain other associated feature. However, if not sure it is safer to treat any child with diabetes as type 1.

The presentation will discuss when type 1 diabetes is unlikely and provide clinical examples of different forms of non-type 1 diabetes with more focus on monogenic diabetes.

**Monogenic Diabetes: An Update on Diagnosis and Management**

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