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# ATTD

## Advanced Technologies & Treatments for Diabetes CONFERENCE

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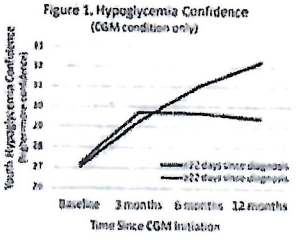


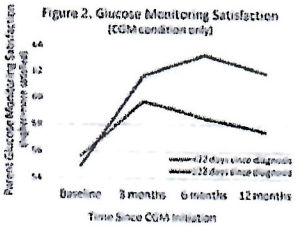


**Background and Aims:** This study sought to evaluate the impact of early continuous glucose monitoring (CGM) initiation on psychosocial functioning among children and adolescents soon after type 1 diabetes diagnosis.

**Methods:** The study sample included 55 youth ages 2.9–17.9 years (M=11.0, SD=3.6) and their parents. Within 40 days of diagnosis, participants were randomized to either a CGM (Dexcom G5 training and initiation) or control condition. Psychosocial survey data were collected from youth and parents at baseline and 3-, 6-, and 12-month follow-ups. Regression models tested interactions between condition assignment and days since diagnosis, adjusting for gender, age, income, and baseline A1c.

**Results:** A beneficial main effect ($d=1.1$, $p=0.019$) of early CGM initiation was found on youths' hypoglycemia confidence at 1 year, with further beneficial effects on youth ($d=-0.3$, $p=0.030$) and parent ($d=-1.0$, $p=0.048$) emotional burden related to glucose monitoring, parent trust in glucose monitoring ($d=1.0$, $p=0.046$), and parent satisfaction with glucose monitoring ($d=1.3$, $p=0.012$) only among youth started on CGM after >22 days from diagnosis. Within the intervention group, early increases in youth hypoglycemia confidence (Figure 1) and parent glucose monitoring satisfaction (Figure 2) were followed by continued gains from 6- through 12-month follow-ups only for youths diagnosed with 22+ days since diagnosis, which tapered off for those with less (<22) days.

**Conclusions:** Early initiation of CGM use has stronger and more widespread beneficial effects when initiation occurs slightly later (more than 3 weeks) following diagnosis. Providers may consider a short delay in CGM initiation to achieve maximal long-term gains.

## 427 / Abstract ID 262

## IMPACT OF ACUTE-PHASE INSULIN SECRETION ON GLYCEMIC VARIABILITY IN INSULIN-TREATED PATIENTS WITH TYPE 2 DIABETES

### GLUCOSE SENSORS

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**Background and Aims:** The association between $\beta$-cell function and glycemic variability remains to be clarified in insulin-treated patients with type 2 diabetes. Therefore, the study sought to examine the association of various indices of $\beta$-cell function with glycemic variability in Chinese insulin-treated patients with type 2 diabetes.

**Methods:** Glycemic variability was assessed by the coefficient of variation (CV) of glucose levels with the use of continuous glucose monitoring (CGM). Basal $\beta$-cell function was evaluated by fasting C-peptide (FCP) and the homeostasis model assessment 2 for $\beta$-cell function (HOMA2-%$\beta$). Postload $\beta$-cell function was measured by 2-hour C-peptide (2hCP) and the acute C-peptide response (ACPR) to arginine.

**Results:** When a cutoff value of CV ≥36% was used to define unstable glucose, the multivariable-adjusted odds ratios for labile glycemic control were 0.34 (95% CI 0.18–0.64) for each 1 ng/mL increase in ACPR, 0.47 (95% CI 0.27–0.81) for each 1 ng/mL increase in FCP, 0.77 (95% CI 0.61–0.97) for each 1 ng/mL increase in 2hCP, and 1.00 (95% CI 0.98–1.01) for each 1% increase in HOMA2-%$\beta$. When we further adjusted for 2hCP and HOMA2-%$\beta$ in the ACPR and FCP analyses, and adjusted for ACPR or FCP in the 2hCP analyses, only ACPR but not FCP and 2hPC remained to be a significant and inverse predictor for labile glycemic control.

**Conclusions:** ACPR evaluated by the arginine stimulation test may be superior to other commonly used $\beta$-cell function parameters to reflect glycemic fluctuation in insulin-treated patients with type 2 diabetes.

## 428 / Abstract ID 946

## TEMPORARY USE OF GLUCOSE SENSORS IN TYPE 1 DIABETES PATIENTS ON CONTINUOUS SUBCUTANEOUS INSULIN INFUSION

### GLUCOSE SENSORS

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**Background and Aims:** The aim of this study was to evaluate the impact of temporary use of real-time continuous glucose monitoring (RT-CGM) on glycemic control in patients with type 1 diabetes (T1D) on continuous subcutaneous insulin infusion (CSII).

**Methods:** The retrospective analysis was performed in patients with T1D on CSII, Minimed 754 (Medtronic, Northridge, CA) with HbA1c>7.5%. Minilink transmitter with Enlite Sensors (Medtronic, Northridge, CA) was used as RT-CGM, which was connected to the CSII for seven days at the beginning, 3 months and 6 months. One-hour training session on how to use the sensor was obtained in all patients prior CGM start. Data was downloaded using CareLink Therapy Management Software (Medtronic, Northridge, CA) and specific changes in basal and bolus insulin, re-education on carb-counting, physical activity and hypoglycemia/hyperglycemia were given to the patients. HbA1c was obtained before, 3 months and six months after the study.

**Results:** 76 patients (age 18.4±4.9 years) with diabetes duration of 7.8±2.3 years and CSII use of 2.7±0.9 years were enrolled in the study. The mean HbA1c decreased from 7.9±0.7% at baseline to 7.1±0.5% at the end of the study ($p=0.03$). Re-education was performed on the following topics: carb counting 43%, hypoglycemia/hyperglycemia treatment 29% and physical exercise 21% of the patients.

**Conclusions:** Temporary use of CGM can improve glycemic control in T1D patients on CSII. Further investigation on larger groups should be performed to confirm our findings.