Hybrid closed-loop insulin therapy improves glycemic control

January 26 2021

Credit: Unsplash/CC0 Public Domain

Hybrid closed-loop insulin therapy improved glycemic control in adolescents and young adults with type 1 diabetes. These outcomes, derived from the International Diabetes Closed-Loop (iDCL) Trial, are

reported in the peer-reviewed journal *Diabetes Technology & Therapeutics* (DTT).

Adolescents and young adults with a mean age of 17 years were randomly assigned to a closed-loop control (CLC) insulin delivery system or a sensor augmented pump (SAP) with a continuous glucose monitoring system over a 6-month period. The Time in Range increased by 13% for the CLC group, compared to a decrease of 1% with SAP, for a group difference of +3.1 hours/day. This reflected a reduction in time spent at >180 mg/dL. The use of CLC was especially effective at increasing Time in Range overnight.

"Notably, we found that this sample of adolescents and young adults successfully used the CGM more than 90% of the time during the 6-month trial and the closed-loop system was active 89% of the time," stated John Lum, Jaeb Center for Health Research, and the iDCL Trial Research Group.

"Multiple Automated Insulin Delivery (AID) systems using different algorithms have been developed in the past decade for patients with type 1 diabetes. Almost all of the systems have shown significant reductions in nocturnal hypoglycemia. The iDCL multicenter trial done in young adults and adolescents with T1D reported in this issue of DTT further advances the use of hybrid closed-loop system by increasing the time-in-range, especially during the night," says Satish Garg, MD, University of Colorado Denver and Editor-in-Chief of *Diabetes Technology & Therapeutics*.

More information: Elvira Isganaitis et al, Closed-Loop Insulin Therapy Improves Glycemic Control in Adolescents and Young Adults: Outcomes from the International Diabetes Closed-Loop Trial, *Diabetes Technology & Therapeutics* (2020). DOI: 10.1089/dia.2020.0572

Provided by Mary Ann Liebert, Inc