COMMENT ON STECK ET AL.

Early Hyperglycemia Detected by Continuous Glucose Monitoring in Children at Risk for Type 1 Diabetes. Diabetes Care 2014;37:2031–2033

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We read with great interest the article by Steck et al. (1) demonstrating that continuous glucose monitoring (CGM) can detect early hyperglycemia in children with positive islet autoantibodies (Ab+) who are at high risk for type 1 diabetes. In fact, the CGM data derived from the group of five subjects who developed type 1 diabetes (Ab+ progressors) showed more impaired glycemia, with percentage of time spent above 140 mg/dL of 31% compared with 12% in Ab+ nonprogressors; Ab+ progressors also had larger SD and greater area under the curve (AUC) during the daytime.

The results of this elegant and concise study are in agreement with our previous article (2) on prognostic accuracy of CGM in the prediction of diabetes in 31 children with incidental hyperglycemia at risk for subsequent diagnosis of diabetes (type 1 or type 2 diabetes or maturity-onset diabetes of the young). Our study showed that three CGM-derived markers were able to predict the subsequent development of diabetes: CGM glucose measurement peak, CGM glucose measurements inside the range 70–125 mg/dL, and percentage of CGM measurements $\geq$126 mg/dL. Moreover, we showed that the CGM markers had a predictive value stronger than that of other metabolic and hormonal markers derived from an oral glucose tolerance test (fasting glucose, 2-h glucose, fasting insulin, 2-h insulin, AUC glucose, and AUC) or from a glucagon stimulation test (basal C-peptide and 6-min C-peptide).

Steck et al. wrote that their study was, to their knowledge, the first study to perform CGM in a group of subjects at high risk of developing type 1 diabetes. Of note, we observed that CGM-derived markers predicted diabetes in seven children classified as affected by type 1 diabetes (two children who became positive for islet autoantibodies during the follow-up and five children with persistent negativity for islet autoantibodies but with fasting C-peptide at diagnosis of $<$0.6 ng/mL). Therefore, we would like to kindly point out that the study of Steck et al. is not the first one to perform CGM in a group of subjects at high risk of developing type 1 diabetes, but it confirms, in Ab+ subjects, what we have previously demonstrated in subjects with incidental hyperglycemia: CGM could be useful to predict diabetes, including type 1 and type 2 diabetes or maturity-onset diabetes of the young.

Nevertheless, we strongly agree with Steck et al. (1) about the need of confirmation in larger prospective studies to define CGM criteria useful for diabetes prediction and diagnosis.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

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