COMMENTS AND RESPONSES

Hypoglycemia Unawareness Is Associated With Reduced Adherence to Therapeutic Decisions in Patients With Type 1 Diabetes: Evidence from a Clinical Audit

Response to Graveling and Frier

We thank Graveling and Frier (1) for their comments, which underline the clinical difficulties in managing patients with impaired awareness of hypoglycemia (IAH). An audit of a U.K.-based structured education program for patients with type 1 diabetes, Dose Adjustment For Normal Eating (DAFNE), found that 48% of those who reported IAH at baseline reported restoration of awareness at 1 year (2). However, a significant proportion of patients remain hypoglycemia unaware if treated with purely educational strategies. Neuroimaging data from our group suggest that patients with hypoglycemia unawareness have reduced activation in appetite motivational networks associated with integrated behavioral responses to hypoglycemia (3). This may suggest that in some patients behavioral strategies may have more benefit. Indeed, behavioral interventions such as blood glucose awareness training have shown encouraging results with improved counterregulatory responses to hypoglycemia as well as reduction in glycosylated hemoglobin, and results were sustained up to 5 years later with a "booster" session (4).

What our study (5) perhaps highlights is that we still do not have an understanding of all the factors active in an individual patient leading to IAH. This understanding may enable us to choose the most appropriate strategy for reversing this condition. However, it may be pragmatic to recognize that treatment of patients with hypoglycemia unawareness may well require a combination of educational and behavioral strategies, in conjunction with the use of technology such as continuous insulin pump therapy and online glucose monitoring with any of these techniques in isolation failing to deliver lasting benefit.

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