GLP-1 Drugs Control Diabetes and Weight and can be Affected by Eating Style

A new study published reports that changes in external eating behavior may influence the glucose-lowering and body weight management efficacy of glucagon-like peptide-1 receptor agonists in type 2 diabetic patients.

Study

The study included a total of 92 diabetic patients who were receiving GLP-1RA therapy from four institutions in Japan.

The participants were assessed for changes in clinical parameters, including fasting blood glucose and glycated hemoglobin, body weight, body fat percentage, and eating behaviors over 12 months. Specifically, the assessments were conducted at baseline (initiation of GLP-1RA therapy) and at 3 months and 12 months post-therapy initiation.

Results

The trial showed that the 12-month GLP-1RA therapy significantly improved glycated hemoglobin (a measure of glycemic control), body weight, and body fat percentage in diabetic patients. At the same time, skeletal muscle mass was preserved despite weight loss. The therapy also led to significant reductions in liver enzymes and total cholesterol, with HDL cholesterol increasing and triglycerides showing a non-significant improving trend, rather than uniformly improving the whole lipid profile.

The analysis of dietary intake revealed significant reductions in total calorie and macronutrient intake following GLP-1RA therapy. External eating behavior scores persistently improved at 3- and 12-months post-treatment.

Emotional eating behavior showed a significant initial reduction at month 3, which returned to the baseline pattern by 12 months. In contrast, restrained eating behavior showed a transient increase at month 3, which returned to the baseline pattern by 12 months.

Among the three eating behaviors analyzed, a higher baseline external eating behavior score was associated with greater body weight reduction at month 12, and a tendency towards improved glycemic outcomes.

Notably, there was some variability between different GLP-1RAs: dulaglutide, oral semaglutide, and injectable semaglutide all significantly reduced both HbA1c and body weight, while liraglutide improved HbA1c but did not lead to significant weight reduction, likely due to the smaller number of participants receiving this drug.

Conclusion

The study findings demonstrate that GLP-1RAs can significantly improve glycemic control and reduce body weight and body fat percentage in diabetic patients after 12 months of treatment in real clinical settings. Besides metabolic improvements, GLP-1RA therapy can substantially reduce external eating behavior, which is a key psychological factor linked to overeating and obesity.

The association between external eating behavior and clinical outcomes observed in the study suggests that external eating behavior scores may serve as a useful behavioral predictor of GLP-1RA therapeutic efficacy and help guide personalized therapeutic strategies in clinical practice. The observed reduction in external eating behavior scores suggests that GLP-1RAs may help suppress overeating triggered by external stimuli, such as the appearance, aroma, or food availability.

Existing evidence demonstrates hyperactivation of reward-related brain regions in obese individuals in response to visual food stimuli. GLP-1RAs have been found to suppress this hyperactivation, which could help to explain the observed reduction in external eating behavior following GLP-1RA therapy. Furthermore, previous studies have shown that individuals with high emotional eating behavior exhibit less suppression of neural responses to food stimuli during GLP-1RA therapy, which can potentially reduce their treatment responsiveness. This may help explain the lack of association observed between emotional eating behavior and long-term clinical outcomes.

It is indicated that participants with higher baseline external eating scores experienced a significantly greater reduction in body weight but only a tendency towards improved glycemic control following GLP-1RA therapy. Mechanistic evidence indicates that GLP-1RAs reduce blood glucose levels by increasing insulin secretion and decreasing glucagon secretion. Since these pathways are unaffected by eating behaviors, only a tendency towards improved glycemic control has been observed among participants with higher baseline external eating behavior.

Because of the observational study design, the study could not determine the causality of observed associations. Furthermore, the study analysis did not consider lifestyle factors, psychological conditions, or socioeconomic status as potential confounding factors, which may influence the findings.

The study analyzed self-reported data on eating behaviors, which may introduce recall bias or social desirability bias. The study population mainly included highly motivated individuals who were more inclined to engage in lifestyle modifications and adhere to treatment, which may restrict the generalizability of the findings to a broad range of diabetic populations.

Source:

https://www.news-medical.net/news/20250919/Can-eating-style-affect-how-well-GLP-1-drugs-control-diabetes-and-weight.aspx