

Exenatide Improves Postprandial Glucose (PPG) Control in Patients with Type 2 Diabetes, as Measured by 1,5-Anhydroglucitol (GlycoMark)

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Postprandial hyperglycemia contributes significantly to A1C and is an independent risk factor for long-term morbidity and mortality in diabetes. Exenatide, an incretin mimetic, has been shown to lower postprandial glucose (PPG) concentrations. The plasma 1,5-anhydroglucitol (1,5-AG; GlycoMark) assay, which increases with lower PPG, has been shown to reflect PPG more robustly than A1C in moderately controlled patients with diabetes. In this post-hoc analysis of a subset of patients with type 2 diabetes (T2DM) from three randomized, double-blind placebo-controlled studies (N=144; age 57.2±10.0y; A1C 8.2±1.0%; weight 96.4±20.9kg; mean±SD), plasma 1,5-AG was measured in patients treated for 30 weeks with either exenatide (5 or 10µg) or placebo. At 30 weeks, A1C was significantly reduced in patients treated with exenatide (10µg) compared to placebo (P<0.001). Consistent with the known improvement in PPG in patients with T2DM treated with exenatide, 1,5-AG increased in patients treated with both 5µg (+2.7±0.6µg/mL; +45.3±11.9%; P<0.05 compared to placebo; mean±SE) and 10µg (+2.9±0.µg/mL; +67.7±14.4%; P<0.01 compared to placebo) of exenatide. Changes in 1,5-AG were significantly correlated with A1C change from baseline (r=-0.74; P<0.0001) and fasting plasma glucose (FPG) change from baseline (r=-0.54; P<0.0001). Moreover, analysis of

1,5-AG changes grouped by A1C change tertiles indicated that patients with larger A1C changes from baseline had larger 1,5-AG changes from baseline. In this post-hoc analysis, the increase in 1,5-AG was consistent with the known improvement in PPG in exenatide-treated patients. Previous studies have shown that as A1C nears 7%, PPG becomes the major contributor to overall glycemic control. As such, 1,5-AG may be a useful complement to A1C to reflect PPG in moderately well-controlled patients with T2DM treated with agents that target PPG.