Effects of Glucagon-like Peptide 1 Receptor Agonists on Lipids
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INTRODUCTION/BACKGROUND

Cardiovascular events are the leading cause of mortality in patients with type 2 diabetes (T2DM), and dyslipidemia is thought to be a major contributor to cardiovascular risk. Glucagon-like peptide 1 receptor agonists (GLP1-RAs) have a prominent role in therapy because of their cardiovascular benefits, but the mechanism for cardiovascular risk reduction is not well understood. Early studies demonstrated favorable effects on triglycerides (TGs), HDL cholesterol (HDL-C) and LDL particle size, but other studies found little or no change, and effects on lipids were often not reported in large clinical trials. We conducted a comprehensive literature review to determine whether study design and/or subject characteristics could explain the reported variable effects of GLP1-RAs on lipids.

METHODS

A PubMed literature search was conducted to identify trials involving at least 100 subjects with T2DM in which a GLP1-RA was administered and serum lipids were measured. Mean values for weight loss, study duration, and both baseline and end-of-study lipid values were recorded.

RESULTS

A total of 14 studies were identified. Of these, both baseline and end-of-study lipid levels were available in only 6 studies for TGs and 4 studies for HDL-C. These studies are summarized in Table 1. TGs decreased in all 6 studies, and HDL-C increased in all 4 studies. Regression analysis showed no relationship between weight loss or study duration and Δ lipids. Baseline HDL-C did not correlate with Δ HDL-C (R = -0.69, p = NS, not shown). However, there was a strong correlation between baseline triglycerides and Δ TGs (R = 0.90, p = 0.01, Figure 1).

REFERENCES