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LETTER TO THE EDITOR

# The Variable Weight Effect of Exenatide Treatment

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Exenatide, a glucagon-like peptide-1 agonist, has enjoyed popularity with treating physicians because it dramatically reduces postmeal glucose (at least early in diabetes), increases β cell mass (at least *in vitro* and in rodents), and reduces weight. Some authors report the weight loss as continuous over a 3.5-year observational period.[1] This has not been my experience.

From 130 clinic charts of patients treated consecutively with exenatide, I found 56 patients who had taken exenatide continuously for 12 months and had data on weight and hemoglobin A1c at least every 3 months. Patients in our clinic receive basic nutrition classes that include information about weight loss and are encouraged to lose weight, if obese, at each provider visit. For data that were missing, the last month value was carried forward.

The baseline characteristics of this group were a mean age of 57.5 (±8.9) years, body mass index of 37.7 (±7.8) kg/m$^2$, and hemoglobin A1c of 6.9 (±1.0)% and 53.6% were female. In all cases the patients insisted that they were consistently taking 10 μg exenatide twice a day. The mean weight loss at 6 months was 4.36 ± 3.43 kg but did not change thereafter (**Figure 1**). For the first 6 months of treatment, 10.7% of patients had not lost any weight. From the 6th to the 12th month, 44.6% of patients lost further weight and 50% increased weight. Compared to those who regained to those who continued to lose, the hemoglobin A1c change from baseline to 12 months was not significantly different ($p = 0.40$) between these groups.

The weight-change-over-time figure that accompanies this 3.5-year observational study[1] shows the weight loss leveling in the second year. We[2] and others[3] have reported that the weight loss also plateaus.

One may explain the lack of continued weight loss to medication noncompliance, as therapy may be associated with nausea, injection pain, expense, and/or inconvenience. However, hemoglobin A1c was maintained in our study as in the other studies,[1] suggesting continued compliance.

Nausea is common with exenatide and is associated with an initial incidence of about 50% and a medication discontinuation rate of 5–10%.[4] The nausea recedes shortly after initiation of therapy and, in most cases, is only mild to moderate.[4] Although nausea could contribute to weight loss, others[4] have observed anorexia and weight loss without nausea and therefore may not relate to the plateauing of weight.

I believe that the failure of some patients to continue to lose weight is due to lessening of the anorexic and satiety exenatide effects. It would be interesting to study the characteristics of those who continue to lose weight so that they may be preselected for treatment.

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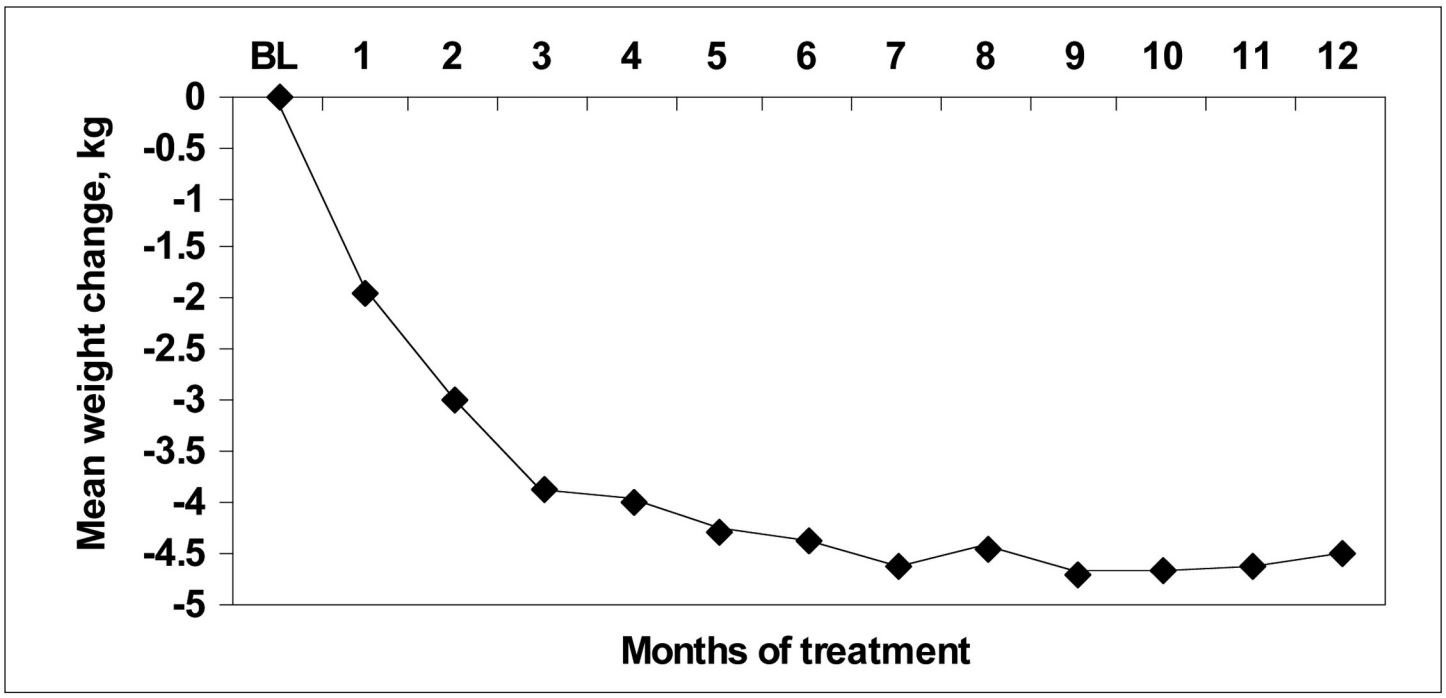


**Figure 1.** The mean weight change in 56 patients during treatment with 10 μg exenatide twice a day. BL, baseline.

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**References:**

1. Kendall D, Blonde L, Mac S, Xue-Song G, Holcombe J, Okerson T, Kim D, Bhole D. Improvements in cardiovascular risk factors accompanied improved glycemic control and weight reduction in patients with type 2 diabetes treated with exenatide for 3.5 y. Diabetes. 2007;56(Suppl 1):A149.
2. Wolfe GS, King AB. Lack of continued weight loss beyond six months despite continued exenatide treatment. Diabetes. 2007;56(Suppl 1);A548.
3. Loh JA, Clement SC. Efficacy of exenatide therapy over 12 months in a "real world" setting. Diabetes. 2007;56(Suppl 1):A152.
4. Buse JB, Henry RR, Han J, Kim DD, Fineman MS, Baron AD; Exenatide-113 Clinical Study Group. Effects of exenatide (exendin-4) on glycemic control over 30 weeks in sulfonylurea-treated patients with type 2 diabetes. Diabetes Care. 2004;27(11):2628-35.