Adjustments to diabetes medications in response to increases in hemoglobin a1c: an epidemiologic study

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Abstract

OBJECTIVE:

The primary objective was to assess associations between increases in glycated hemoglobin (HbA1c) levels and medication adjustments among patients with diabetes. A secondary objective was to measure the effect of adjustments on subsequent HbA1c levels.

METHODS:

A retrospective analysis of administrative data from a large health insurer in Hawaii of 7654 patients with diabetes mellitus type II, HbA1c levels greater than 7%, and who were taking oral diabetic medications. Patients were eligible if they had an HbA1c measurement in 2009, a prior measure 30 or more days previously, and at least 30 days of follow-up to identify medication adjustments. Patients were classified into 3 groups based on their extent of change in HbA1c levels. Patients were followed to determine the frequency of medication adjustments and to observe the possible benefit of making adjustments on subsequent HbA1c levels.

RESULTS:

Medication adjustments were the exception, occurring among less than a fourth of patients. Compared with patients without HbA1c increases, patients with <1% HbA1c increases made adjustments 20% more frequently, and patients with increased HbA1c levels of 1% or more made adjustments 60% more frequently. Patients with similar HbA1c increases were more likely to adjust their medications if they had higher baseline HbA1c levels. Medication adjustments were mostly for oral diabetes medications; insulin use was seldom initiated, and then primarily by patients with HbA1c levels of 9% or higher. Patients with medication adjustments averaged about 0.40% lower HbA1c levels when reassessed after 120 days or more.

CONCLUSION:

The results show limited responsiveness to increases in HbA1c levels and a low initiation rate of insulin use. Patients adjusting their medications, however, had clinically significant improvements in their HbA1c levels. Clinical inertia and patient concerns are discussed as factors possibly limiting the frequency of medication adjustments.

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