

Self-Measurement of Blood Glucose in Patients with Type 2 Diabetes: A Health Economic Assessment

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Abstract

Background:

The clinical role and the potential benefit of self-measurement of blood glucose (SMBG) for patients with type 2 diabetes are still under discussion. Even less information is available on the cost-effectiveness of performing SMBG by this patient group. The goal of this study was to establish cost-effectiveness ratios of performing SMBG by patients afflicted by this disease.

Methods:

We assessed the benefit and cost-effectiveness of SMBG in type 2 diabetes from a third-party payer perspective based on results of both a large epidemiologic cohort study reflecting the reality of care, and a Markov model calculation.

Results:

Analysis of cohort study data revealed that total costs cumulated over the observation period of 8 years were lower in the SMBG group than in the non-SMBG group according to savings of € 1'714 [oral antidiabetic drugs (OAD) only] and € 13'815 (OAD + insulin) per patient. Several scenarios were considered in the model-based calculation. The cost-effectiveness ratio varied from € 20'768/life year gained to domination of SMBG use compared to nonusers in OAD treated patients and from € 59'057/life year gained to domination of SMBG use compared to nonusers in OAD + insulin treated patients.

Conclusion:

Results indicate that SMBG in type 2 diabetes offers an excellent opportunity to get a high investment–outcome ratio in the treatment of this pandemic disease.

J Diabetes Sci Technol 2007;1(5):676-684

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Abbreviations: (AMI) acute myocardial infarction, (CE) cost-effectiveness, (FBG) fasting blood glucose, (LYG) life year gained, (OAD) oral antidiabetic drugs, (SMBG) self-measurement of blood glucose

Keywords: CEA, costs, cost-effectiveness, diabetes mellitus type 2, self-measurement of blood glucose, SMBG

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