

EDITORIAL COMMENTARY

Self-Monitoring of Blood Glucose Levels in Persons with Type 2 Diabetes Not Requiring Insulin: Routine Use Is Not Recommended

The time has come to question the benefit of one of our routine clinical practices in diabetes education and care. Are we guilty of “treatment creep” in teaching people with type 2 diabetes who do not require insulin about self-monitoring of blood glucose (SMBG)? Why is SMBG perceived by health professionals as a valuable tool of empowerment for persons with type 2 diabetes who are not using insulin? Is this practice reinforced by the prominence of SMBG equipment in the diabetes displays of most pharmacies in Canada?

In this issue of the *Canadian Journal of Diabetes*, Latter and colleagues review the practices of health professionals in making SMBG recommendations for adults with type 2 diabetes treated with lifestyle (with or without oral drugs) in Nova Scotia during the winter months of 2007–2008 (1) prior to publication of the *Canadian Diabetes Association 2008 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada* (the 2008 clinical practice guidelines) (2). The 2003 clinical practice guidelines published 5 years earlier recommended that “all people with diabetes, who are able, should be taught how to self-manage their diabetes, including SMBG” (3). The evidence that was used to make that recommendation was a systematic review of comprehensive self-management training in type 2 diabetes published in 2001 (4). The 2003 clinical practice guidelines recommended that the frequency of SMBG should be based on the treatment prescribed, the type of diabetes and the individual’s ability to use the results to modify behaviours or adjust medication. In the current study by Latter and colleagues, the health professionals were guided by those 2003 recommendations. It was common practice at that time to recommend SMBG several times per week at different times of the day to provide information to patients and providers on the variability of blood glucose levels in response to carbohydrate intake, mixed meals and exercise. The authors interviewed a small, self-selected group of 21 volunteer physicians, diabetes educators and pharmacists (1). All participants recommended some form of SMBG for adults with type 2 diabetes treated with lifestyle modification (with or without oral drugs). The healthcare providers were reluctant at that time to rely solely on glycated hemoglobin (A1C) for surveillance of glycemic control in this group of patients. The difference in responses between the 3 professional groups related only to the recommended frequency of SMBG testing.

Since publication of the 2003 and 2008 clinical practice guidelines, diabetes practice has evolved in Canada, but have we evaluated our individual beliefs, biases and local policies on SMBG for persons with type 2 diabetes who do not require insulin? As these authors indicate in the discussion section of the paper, the current 2008 CDA recommendations are open to broad interpretation because it is not clearly stated that SMBG is ineffective in improving glycemic control in this group of patients but rather that the “frequency of SMBG should be individualized” (2). The Cochrane review of this topic is not helpful because it has not been updated since 2005 (5); the conclusions are similar to the 2003 CDA guidelines. A recent 2010 systematic review conducted by the Aberdeen Health Technology Assessment Group in Europe (6) and another recent comprehensive review of 14 published randomized controlled trials (7) concluded that SMBG is of limited value in adults with type 2 diabetes who are not using insulin. A similar conclusion was reached by the Canadian Optimal Medication and Prescribing Service of the Canadian Agency for Drugs and Technologies in Health (8).

The role of SMBG is particularly perplexing in adolescents with type 2 diabetes who do not require insulin. Pediatric diabetes teams routinely teach the use of SMBG upon diagnosis of type 1 diabetes. Perhaps it is most difficult for these teams to switch gears for youth with type 2 diabetes. However, factors mitigating this challenge are the dramatic differences in the education and counselling of youth with type 2 diabetes about self-management and the lack of any evidence of a role for SMBG in type 2 diabetes in this age group. A randomized controlled trial of the impact of SMBG on glycemic control and the potential negative emotional effect in the adolescent population with type 2 diabetes is desperately needed. Alternatively, perhaps we need better health information systems to ensure that patients of all ages have access to their personal A1C results, better tools that are age- and culturally appropriate to help them interpret their A1C, and better strategies to internalize and track their A1C level over time (9).

Recognition of the need for highly selective and limited use of SMBG in adolescents and in adults with type 2 diabetes who are not using insulin is important for a number of reasons. Most important is consistent and simple messages in the rapidly evolving world of inter-professional chronic

disease management, which are vital for achieving improved population health. The recommendation for SMBG must be the same in primary and specialty care, within and between health professionals, and in both small, isolated and large, urban settings. We must also convince leaders in healthcare settings to abandon the use of SMBG as a measure of quality in clinical care so that professionals will believe they will not be judged on the number of patients who successfully implement SMBG. Lastly, we hope the savings in public funding for strips can be diverted to human resources to encourage behaviour modification in order to achieve optimum glycaemic control.

The new version of the clinical practice guidelines will be available in 2013. The evidence is mounting quickly that health professionals working with people with type 2 diabetes who do not require insulin must use SMBG in more selective and limited circumstances (7).

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Look for the notification in your inbox or mailbox of the Regional Annual Meeting in your community this spring or go to <http://www.diabetes.ca/get-involved/community> to find the Regional Award Nomination Forms.