SMBG: Who will benefit the most?

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Self-monitoring of blood glucose (SMBG) is both an important and controversial aspect of primary care diabetes. Emerging evidence has caused teams to reflect on the worth of this expensive, and yet potentially empowering, intervention. In this editorial, new evidence is examined, previous consensus statements reflected upon, and emerging guidance reviewed to assess how teams can optimise effective use of SMBG in the context of limited prescribing budgets.

It would be easy to be seduced by contemporary blood glucose meters. Their ever-increasing technological sophistication and memory capabilities combine with speed and ease of use to offer the potential to empower patients to make appropriate changes in lifestyle as well as pharmacological treatment. However, we know that in the normal physiological state, blood sugar can fluctuate considerably during the day, and there is little evidence that people who self-monitor alter their treatment accordingly (Kennedy, 2001).

In 2004, this journal published a consensus document on self-monitoring (Owens et al, 2004) and continued the debate in 2005 (Owens et al, 2005). These documents stratified the use of glucose self-monitoring according to risk. The value of monitoring blood glucose levels in type 1 diabetes was clear, allowing the person with diabetes to confirm hypoglycaemia or high glucose concentrations and to take corrective action. Also, in people with type 2 diabetes using insulin, it was felt necessary to monitor regularly. There was less consensus in stable type 2 diabetes, especially if diet controlled, and this is supported by a Cochrane Collaboration (Welschen et al, 2007). These documents concluded that more data are needed.

More data is emerging. A previous meta-analysis reported a modest mean improvement in HbA_{1c} of approximately 0.3% with self-monitoring, but the confidence intervals were wide so this difference was not significant (Coster et al, 2000). In a more recent study, 453 people with reasonably well-controlled and stable non-insulin treated type 2 diabetes from English general practices were randomised to three groups: usual care without self-monitoring; basic information on self-management and limited monitoring; or training in self-management and encouragement to undertake more intensive blood monitoring, over a 3-year period (Farmer et al, 2007). This trial concluded that there was no real value from glucose self-monitoring in such a population.

The 2003 Diabetes UK statement on self-monitoring stated that 'home monitoring is essential in the context of diabetes education for self-management in order to enable the person to make appropriate treatment or lifestyle choices' (Diabetes UK, 2003). NICE does not recommend self-monitoring as a stand-alone intervention (NICE, 2003). These recent data has informed the updated NICE guidance on the management of type 2 diabetes (available online as a draft for consultation: www.nice.org.uk/page.aspx?o=456353).

At the heart of this debate is cost-effectiveness. In the fourth quarter of 2006, the NHS spent nearly £33 million on glucose self-monitoring strips and meters (Drug and Therapeutics Bulletin, 2007). This does not take into account the considerable amount of nurse and doctor time devoted to responding to queries about results and devices. This level of expenditure, which exceeds the spend on oral hypoglycaemic agents, has lead some regions to restrict the prescribing of blood glucose strips. Many people with diabetes will feel that there is only a fine distinction between rationing and this type of cost control. There has been little real attempt to further empower patients by engaging them in this debate. Yet surely such a debate should be taking place at all levels of diabetes care.

What then is the way forward for blood glucose monitoring? The answer, as always, must lie with the individual patient and their own decision, informed by their primary care teams, who in turn will be making decisions informed by NICE and local prescribing guidelines. These new data are likely to stiffen the resolve of teams who do not routinely recommend self-monitoring of blood glucose. When the NICE guidance is formally agreed next year, the situation may become clearer, helping with decision making. Until then, I'm sure most clinicians would agree there is little clear value for this expensive intervention in people with type 2 diabetes, except in those using insulin or running clear-cut risks. ■