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Self-monitoring of blood glucose: Invaluable in managing diabetes

Self-monitoring of blood glucose (SMBG) is vital to good diabetes care and patient education should be at the heart of all diabetes services. SMBG is a useful tool for the person with diabetes but it will not help improve control of the diabetes or the quality of life if used inappropriately or without education (Alford, 2004).

educational tool.

Evidence and guidelines

Evidence for SMBG has accrued over the years but remains sketchy; the evidence that is available is discussed in a MeReC bulletin (National Prescribing Centre, 2002). The first SMBG factsheet issued by the National Diabetes Support Team (2003) cited a lack of proven superiority of blood glucose monitoring over urine testing as a reason why some primary care trusts (PCTs) discouraged the prescribing of blood glucose monitoring strips. However, the factsheet does make it clear that 'self-monitoring can be used in conjunction with appropriate therapy as part of integrated self-care'. Surely this means that patients deserve to be well educated on how SMBG can benefit them?

There still remained no guidance as to how often people should test their blood glucose levels until Owens and colleagues set the wheels in motion by suggesting suitable regimens for different situations (Owens et al, 2004), a debate ensued and, following a period of consultation, a second paper from the same group emerged outlining appropriate use of SMBG in people with diabetes (Owens et al, 2005).

More valuable evidence was presented at this year's meeting of the European Association for the Study of Diabetes in Athens, Greece. The ROSSO study (Martin et al, 2005; see pages 369–372 for further discussion) concluded that SMBG enhances long-term outcomes in type 2 diabetes. One should also note that a recently published study showed that in people with non-insulin treated type 2 diabetes SMBG did not significantly impact on metabolic control (Franciosi et al, 2005).

Conclusion

For the person with diabetes, blood glucose monitoring is not easy; it can be frustrating and daunting to accept the responsibility of self-management. The specialist nurse needs to encourage, engage and empower the individual with diabetes and education around blood glucose monitoring can be a useful tool in that process. We also need to engage with others within PCTs and explain how self-monitoring, when taught and used skilfully, can lead to greater understanding for individuals with diabetes and help improve quality of life. ■

History of self-monitoring strips

Blood glucose monitoring strips became available on prescription in the summer of 1988, prior to which patients were given a few strips by their clinics and in some cases taught how to 'split' the strips so that two or three tests could be achieved with only one! Or they bought their own supplies. Meters at that time were costly (approximately £100), they were fairly bulky, were slow to use and some required a wash bottle to rinse the strip prior to insertion into the meter. There were only a few examples of meters on the market and those were given to only a few selected patients. HbA_{1c} testing was in its infancy and not routinely checked at specialist clinics and patients were mostly unaware of what HbA_{1c} was or how it related to their diabetes.

However, with strips becoming available on prescription, SMBG began to be taught as a routine part of diabetes management, or, rather, the technique for testing and recording was taught. Titrating doses against the results was not always so well explained. There was no national plan, so each clinic developed its own practice.

Evidence for the benefits of good glycaemic control

The Diabetes Control and Complications Trial (DCCT Research Group, 1993) provided evidence that good glycaemic control in type 1 diabetes could reduce both micro- and macrovascular complications. The evidence from DCCT encouraged the use of SMBG; meters became more freely available and their cost plummeted. However, the cost of the strips has remained about the same and this one factor has been instrumental in placing monitoring firmly onto the political agenda.

Messages from the DCCT were transferred across the management of people with diabetes and type 2 patients were encouraged to test as avidly as those with type 1. Many specialist nurses, myself included, can offer anecdotal evidence that monitoring is a useful

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