

How much control in type 2 diabetes mellitus?

D Bowen Jones

Diabetes and Endocrinology Consultant, Arrowe Park Hospital, Wirral, England

TITLE Impact of self-monitoring of blood glucose in the management of patients with non-insulin treated diabetes: open parallel group randomised trial

Published online August 2007

AUTHORS Farmer A, Wade A, Goyder E et al.

Correspondence to D Bowen Jones, Arrowe Park Hospital, Arrowe Park Road, Wirral, L49 5PE

JOURNAL *BMJ* 2007; **335**:132–6.

tel. +44 (0)151 678 5111

KEYWORDS Glycaemic control, home blood glucose monitoring, type 2 diabetes.

fax. +44 (0) 151 342 5671

DECLARATION OF INTERESTS No conflict of interests declared.

e-mail

davidbowenjones@hotmail.com

SUMMARY

This study, carried out between January 2003 and December 2005, investigated the effectiveness of self-monitoring of blood glucose in patients with non-insulin treated diabetes mellitus. Four hundred and fifty-three patients with non-insulin treated diabetes of mean age 65.7 years, median duration of diabetes three years and with a mean HbA1c of 7.5% who were not testing their blood glucose >x2 weekly were studied. They were randomised to usual care (152), less intensive monitoring with blood glucose measurement and medical advice (150) and more intensive blood glucose measurement with training in interpreting the results (151). Fifteen per cent of those eligible for the study were included.

The primary outcome measure was the HbA1c at 12 months, and there was no significant difference between the groups after adjustment for baseline measurements ($p=0.12$). Secondary outcome measurements were weight, blood pressure, total plasma cholesterol and high density lipoprotein, and body mass index. There was a significant reduction in total cholesterol in the self-monitoring groups ($p=0.01$), but not in any other secondary outcome measure.

It was concluded that there was no evidence that self-monitoring of blood glucose with or without patient instruction improved glycaemic control in already well-controlled patients with type 2 diabetes mellitus.

OPINION

A central component of the management of non-insulin dependent diabetes mellitus has been that monitoring of blood glucose allows patients to improve their glycaemic control and thereby reduce the occurrence of long-term complications. In patients treated with insulin, it is accepted that it allows patients

to adjust the dose of insulin, dietary and other behaviours to correct glucose levels.

For non-insulin treated patients treated by diet alone or with oral agents, however, there has been contradictory evidence. The publication of the Oxford group's randomised trial has again divided opinion. They conclude that there is no evidence of benefit from monitoring as there were insignificant changes in HbA1c, weight or blood pressure. Surprisingly, there were improvements in blood lipid levels in the intensive monitoring group. The authors conclude by suggesting that the cost of home monitoring, which is considerable (£100m/pt in UK), would be better used in supporting other health-related behaviours.

The shortcomings of this study, highlighted in a linked editorial,¹ include exclusion of patients already monitoring more than twice weekly, small group numbers and selection of groups with already satisfactory control thereby limiting the scope for improvement. The results have been criticised online by patients who feel strongly that monitoring allows them to be in control of their condition. Some primary care practitioners have also used the study to refuse to prescribe home monitoring test strips to patients.

The study does not tell us whether home glucose monitoring at diagnosis, in poorly controlled individuals, following treatment change, or on specific treatments such as Sulphonylureas, is beneficial. However, it is reasonable to conclude that frequent glucose testing in well-controlled patients on stable treatment does not confer any further benefit.

REFERENCES

- Heller SR. Self-monitoring of blood glucose in type 2 diabetes. *BMJ* 2007; **335**:105–6.