ORIGINAL ARTICLE

The Impact of a Decision Support Tool Linked to an Electronic Medical Record on Glycemic Control in People with Type 2 Diabetes

Waruna Gunathilake, M.D.,[1,2,3] Sajith Gunawardena,[4] Ranga Fernando,[5]
George Thomson, MbChB,[2,3] Devaka Fernando, M.D., FRCP[2,3,6]

Abstract

Aims:

We retrospectively compared glycemic control and glycemic burden in type 2 diabetes patients treated by general physicians with access to decision support with those treated by general physicians without access to decision support.

Methods:

A total of 875 patients [471 (53.8%) males] aged 54.3 [standard deviation (SD) 13.1] years followed up over 84 months. A total of 342 patients (39%) were managed with decision support, and effects on glycosylated hemoglobin (HbA1c) were assessed.

Results:

There was no difference between groups in starting HbA1c [7.6 (SD 1.8) versus 7.5 (SD 1.5); p = not significant] at baseline. Patients treated with decision support were more likely to have planned review of HbA1c, adjustment of medication, prescription of statins, dietetic and nurse educator inputs (71.3% versus 58.5%; Chi squared = 14.7; p = .001). The mean HbA1c in the group treated with decision support was not significantly reduced within the first year [7.5% (SD 1.8) versus 7.6% (SD 1.5); p = not significant; 95% confidence interval (CI) -0.33 to 0.17], but statistically significant differences were apparent at year 2 [7.2% (SD 2.0) versus 8% (SD 3.4); p = .0001; 95% CI -1.3 to -0.5] and sustained through year 3 [7.2% (SD 2.0) versus 8.0% (SD 2.0); p = .0001; 95% CI -1.2 to -0.6], year 4 [7.2% (SD 2.3) versus 8.2% (SD 2.5); p = .0001; 95% CI -1.2 to -0.6], year 5 [7.0% (SD 2.3) versus 8.3% (SD 2.6); p = .001; 95% CI -1.5 to -0.8], year 6 [7.0% (SD 2.0) versus 8.2% (SD 2.4); p = .001; 95% CI -1.5 to -0.9], and year 7 [6.9% (SD 1.2) versus 8% (SD 1.8); p = .001; 95% CI -1.4 to -1.0].

Conclusion:

Use of a decision support system showed benefits in adherence to clinical care pathways and achieving significant improvements in glycemic control.

J Diabetes Sci Technol 2013;7(3):653–659

Author Affiliations: [1]Ministry of Health Sri Lanka, Colombo, Sri Lanka; [2]Sheffield Hallam University, Sheffield, United Kingdom; [3]Sherwood Forest Hospitals National Health Service Foundation Trust, Nottinghamshire, United Kingdom; [4]Open University, Colombo, Sri Lanka; [5]Birkdale School, Sheffield, United Kingdom; and [6]University of Sheffield, Sheffield, United Kingdom

Corresponding Author: Devaka Fernando, M.D., Department of Diabetes and Endocrinology, Sherwood Forest Hospitals National Health Service Foundation Trust, Sutton-in-Ashfield, Nottinghamshire NG17 4 JL, UK; email address *devaka.fernando@sfh-tr.nhs.uk*