

Self-monitoring of blood glucose patterns among Turkish diabetic patients

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Objectives:

Self-monitoring of blood glucose (SMBG) increases life expectancy and improves diabetic patients' quality of life. SMBG helps people with diabetes to assess the effects of lifestyle changes and medications on their blood glucose levels. Consequently, SMBG allows people with diabetes to undertake necessary interventions to improve their health outcomes. For people with type 2 diabetes using insulin, benefit of SMBG in improving glycemic control is well established. It helps also for detecting hypoglycemia (1). Although these advantages usage remains low. Our aim was to investigate the use of SMBG among our patients.

Methods:

17 type 1 diabetic patients and 159 type 2 diabetic patients' files were randomly evaluated to investigate SMBG practice patterns of our patients. Participants were recruited from a tertiary care clinic of the University Dumlupınar Medical Centre, a teaching hospital in Turkey. People who were eligible for participation included those who were 18 years and above, were diagnosed with type 2 or type 1 diabetes. People who were diagnosed with gestational diabetes or age under 18, or illiterate were excluded.

Results:

Among the participants all type 1 patients used insulin, while 38 type 2 diabetic patients used drug only, 35 type 2 diabetic patients used drugs in combination with insulin and 86 type 2 diabetic patients used insulin only. 90.3% of our patients owned a glucometer. Although this high percentage 1 of the type 1 and 9 of the type 2 diabetic patients did not practice SMBG despite owning a glucometer. 23.5% of type 1 diabetic patients and 47.2% of type 2 diabetic patients only measured their fasting glucose levels. 11.8% of type 1 diabetic patients and 4.4% of type 2 diabetic patients only measured their postprandial glucose levels. 58.8% of type 1 diabetic patients and 40.9% of type 2 diabetic patients measured fasting and postprandial glucose levels. Only a minority (33.3%) of those using insulin practiced daily SMBG. 7 patients of those using insulin did not practice SMBG. 31 patients reported to examine their blood glucose levels if they were symptomatic. 20 patients monitored their blood glucose weekly, 3 patients once monthly and 15 every second day. 7 patients checked their blood glucose level twice daily, 3 patients 3 times, 5 patients 4 times and 1 patient checked their blood glucose levels 6 times daily. Adjusting the insulin dose according to SMBG levels is performed only in 39.1% of patients. 84 patients do not make an adjustment of the insulin dose despite performing SMBG. 56 patients did never check postprandial glucose levels.

Discussion:

Management of hyperglycemia without hypoglycemia mainstays the major goal of diabetes therapy. Intensive glycemic control has the threat of hypoglycemic episodes. The only way to detect glycemic variability and blood glucose (BG) patterns is by frequent measurement and documentation of BG levels. Self-monitoring of blood glucose (SMBG), is the most widely used way to assess patterns of BG and determine changes in therapy. But in real life, however, patients often do not regularly measure BG or adjust diet or therapy in response to out-of-range BG values, even after appropriate education, due to a variety of barriers, which can be due to practical, emotional, or psychological reasons (2). Also our patients have been using SMBG not in the way to adjust their treatment modalities. The majority of them only monitored their fasting glucose levels. However studies revealed that appropriate use of structured SMBG data led to earlier, more frequent, and more effective treatment modification recommendations and improved glycemic control in these patients (2). Even patients using insulin did not practice daily SMBG. Patient compliance with SMBG was limited in our study patients.

References:

1. Ong WM, Chua SS, Jenn C. Barriers and facilitators to self-monitoring of blood glucose in people with type 2 diabetes using insulin: a qualitative study Patient Preference and Adherence 2014;8:237-246.
2. Choudhary, P, Genovese, S, Reach G. Blood Glucose Pattern Management in Diabetes: Creating Order from Disorder.

Conclusions:

In summary the majority of our patients do not perform SMBG adequately and do not adjust their medicament doses or insulin doses.

