

Value of Self-Monitoring Blood Glucose Pattern Analysis in Improving Diabetes Outcomes

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Abstract

Self-monitoring of blood glucose (SMBG) is an important adjunct to hemoglobin A1c (HbA1c) testing. This action can distinguish between fasting, preprandial, and postprandial hyperglycemia; detect glycemic excursions; identify and monitor resolution of hypoglycemia; and provide immediate feedback to patients about the effect of food choices, activity, and medication on glycemic control.

Pattern analysis is a systematic approach to identifying glycemic patterns within SMBG data and then taking appropriate action based upon those results. The use of pattern analysis involves: (1) establishing pre- and postprandial glucose targets; (2) obtaining data on glucose levels, carbohydrate intake, medication administration (type, dosages, timing), activity levels and physical/emotional stress; (3) analyzing data to identify patterns of glycemic excursions, assessing any influential factors, and implementing appropriate action(s); and (4) performing ongoing SMBG to assess the impact of any therapeutic changes made.

Computer-based and paper-based data collection and management tools can be developed to perform pattern analysis for identifying patterns in SMBG data. This approach to interpreting SMBG data facilitates rational therapeutic adjustments in response to this information. Pattern analysis of SMBG data can be of equal or greater value than measurement of HbA1c levels.

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Abbreviations: (AACE) American Association of Clinical Endocrinologists, (HbA1c) hemoglobin A1c, (T1DM) type 1 diabetes, (T2DM) type 2 diabetes, (SMBG) self-monitoring of blood glucose

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