

Importance of Manually Entering Blood Glucose Readings When Wireless-Compatible Meters Are Not Being Used with an Insulin Pump

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Abstract

Background:

The objective was to determine if there were differences in blood glucose monitoring (BGM) data downloaded from insulin pumps of patients who use meters that wirelessly transmit data to their insulin pumps (i.e., wireless group) and those who do not (i.e., nonwireless group).

Methods:

Blood glucose monitoring data were downloaded from the meters and insulin pumps of 47 children and adolescents with type 1 diabetes mellitus. Independent and paired *t* tests compared BGM data downloaded from meters and BGM data downloaded from insulin pumps.

Results:

There were significant differences in BGM data downloaded from the insulin pumps of patients using wireless meters compared to those using nonwireless meters. Wireless patients appeared to engage in more BGM, had more low and in-range BG readings and fewer very high BG readings than nonwireless patients. However, a comparison of BGM data downloaded from meters and insulin pumps of nonwireless patients indicated that their insulin pump data significantly underestimated the number of BGM readings conducted, as well as the number of low and in-range readings, while overestimating the number of very high BGM readings.

Conclusions:

Because patients who use nonwireless-compatible meters do not manually enter their low and in-range BGM readings into the insulin pump, BGM data downloaded only from pumps may provide an incomplete representation of BGM frequency or results. It is recommended that patients use meters that directly communicate with pumps or perform bolus calculations. Patients should be educated about the importance of manually entering all BGM readings if they do not use a wireless-compatible meter with their insulin pump.

J Diabetes Sci Technol 2013;7(4):898–903

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Abbreviations: (A1C) hemoglobin A1c, (BGM) blood glucose monitoring

Keywords: adherence, bolus calculator software, children and adolescents, insulin pumps, type 1 diabetes mellitus

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