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CONTROVERSIES in
Continuous Glucose Monitoring

Continuous Glucose Monitoring Awaits Its "Killer App"

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Abstract

Continuous glucose monitoring (CGM) could drive a paradigm shift in diabetes care, but realization of this promise awaits a complementary shift in the way CGM data is used. The most exciting use for CGM is as the input for automated, closed-loop glucose control. Although first generation CGM devices leave much room for improvement, closed-loop control does not have to wait. Algorithms should target blood glucose levels above the normal range for safety in the setting of imperfect CGM measurements. If the mean glucose under closed-loop control is sufficiently close to the chosen target, hemoglobin A1c goals could be met while minimizing risk of hypoglycemia. CGM may also improve the care of intensive care unit patients treated with intensive insulin therapy and the large numbers of diabetic patients in general hospital wards.

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Abbreviations: (BG) blood glucose, (CGM) continuous glucose monitoring, (FDA) Food and Drug Administration, (HbA1c) hemoglobin A1c, (ICU) intensive care unit, (IIT) intensive insulin therapy, (ISF) interstitial fluid, (LOS) length of stay, (MARD) mean absolute relative difference

Keywords: CGM, closed-loop glucose control, continuous glucose monitoring, diabetes mellitus, intensive insulin therapy

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