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Treatment Satisfaction and Quality of Life for an Integrated Continuous Glucose Monitoring/Insulin Pump System Compared to Self-Monitoring Plus an Insulin Pump

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Abstract

Background:

Little is known about how the most advanced technology affects treatment satisfaction and health-related quality of life (HRQOL) in adults with diabetes. This study was designed to assess treatment satisfaction and HRQOL among users of an integrated real-time (RT) continuous glucose monitoring (CGM)/continuous subcutaneous insulin infusion (CSII) system compared with those using self-monitoring of blood glucose (SMBG) with CSII.

Methods:

Participants were 311 adult respondents to an Internet survey, 162 using RT-CGM/CSII, 149 using SMBG + CSII (median age 43 years; type 1 diabetes 94%; diabetes duration >15 years 61%; median insulin use 15 years). Respondents completed instruments assessing glucose monitoring system and insulin delivery system convenience, interference, burden, glucose control efficacy, cost satisfaction, overall satisfaction, and treatment preference, as well as quality of life (diabetes-related worries, social burden, and psychological well-being). Real-time CGM/CSII users also assessed specific elements of the RT-CGM/CSII system. Group differences were assessed using analysis of covariance controlling for respondent characteristics.

Results:

The RT-CGM/CSII group gave significantly better ratings than the SMBG + CSII group for their glucose monitoring system's glucose control efficacy, overall satisfaction, desire to switch, and willingness to recommend, and significantly worse ratings for interference with daily activities. The RT-CGM/CSII group gave significantly better ratings than the SMBG + CSII group for their insulin delivery system's convenience and glucose control efficacy, overall satisfaction, desire to switch, and willingness to recommend. Real-time CGM/CSII users gave positive ratings of all system features.

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Abbreviations: (BGMS) blood glucose monitoring system, (BGMSRQ) blood glucose monitoring system rating questionnaire, (CGM) continuous glucose monitoring, (CSII) continuous subcutaneous insulin infusion, (DMS) data-management software, (HRQOL) health-related quality of life, (IDSRQ) insulin delivery system rating questionnaire, (MDI) multiple daily injection, (PRO) patient-reported outcome, (RCT) randomized controlled trial, (RT) real time, (SDU) standard deviation unit, (SMBG) self-monitoring of blood glucose, (UAQ) user acceptance questionnaire

Keywords: continuous glucose monitoring, continuous subcutaneous insulin infusion, health-related quality of life, patient satisfaction

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Abstract cont.

Conclusions:

Users of the integrated RT-CGM/CSII system reported more benefits of treatment, higher treatment satisfaction and quality of life, and greater preference for this system than SMBG + CSII users.

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