

ENHANCING THE OUTCOMES OF INSULIN PUMPS WHEN COMBINED WITH A HYBRID, CONTINUOUS CARE MODEL

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Background and Aims: The rise in Type 1 diabetes (T1D) globally has intensified the need for effective diabetes management. Automated insulin delivery (AID) technologies have advanced in recent years, but most focus on patient self-management. Healthcare Providers (HCP) often do not interact with AID data or combine it with other virtual biomarkers and behavior therapy. This study assesses AID's impact on glycemic control for those under continuous multidisciplinary team care using a hybrid model, versus traditional self-care with only physical interaction.

Methods: A retrospective observational study at GluCare Health (UAE) focused on 8 T1D patients who started using the Medtronic 780G AID with the GluCare hybrid care model (1) over 6-8 months. The GluCare Health hybrid care model combines a physical component and continuous data monitoring platform with near real-time engagement for behavioral improvements. Education and training sessions ensured regular monitoring, and patients engaged 5-7 times more than standard care.

Results: The patients, with an average age of 26.8 years, saw significant improvements in glycemic control post-insulin pump installation, including a reduction in HbA1c (8.04% to 6.75%, MD -1.72 ± 1.05), increase in time in range (59.17% to 74.75%, MD $+15.58 \pm 16.53$), and a decrease in insulin requirements (-8.91 ± 19.35 units). Compared to existing literature, AID usage alone led to a 0.5 reduction in HbA1c and a 5.0% increase in TIR (2).

Conclusions: These findings highlight improved outcomes when HCPs actively engage and monitor AID data. A hybrid care model (physical + digital) facilitates increased engagement and ongoing diabetes management post insulin pump installation.