

Patients' Perception and Future Acceptance of an Artificial Pancreas

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Abstract

Background:

Little is known of patient acceptance of an artificial pancreas (AP). The purpose of this study was to investigate future acceptance of an AP and its determinants.

Methods:

Patients with type 1 diabetes treated with insulin pump therapy were interviewed using questions based on the technology acceptance model and completed the diabetes treatment and satisfaction questionnaire (DTSQ).

Results:

Twenty-two adults with type 1 diabetes participated. Half of the patients were followed in a university hospital, and the others were under treatment in an affiliated teaching hospital. Half of the patients were male. The mean DTSQ score was 29 (range 23–33). The AP was perceived as likely to be useful. Perceived advantages were a stable glucose regulation, less need for self-monitoring of blood glucose, relief of daily concerns, and time saving. Participants were confident in their capability to use the system. Although many participants (58%) had been reluctant to start continuous subcutaneous insulin infusion, the majority (79%) felt they would have no barriers to start using the AP. Trust in the AP was related to the quality of glucose control it would provide. Almost everyone expressed the intention to use the new system when available, even if it would initially not cover 24/24 hours.

Conclusion:

The overall attitude on the AP was positive. Intention to use was dependent on trust in the AP, which was related to the quality of glucose control provided by the AP.

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Abbreviations: (AP) artificial pancreas, (CGM) continuous glucose monitoring, (CSII) continuous subcutaneous insulin infusion, (DTSQ) diabetes treatment and satisfaction questionnaire, (MDI) multiple daily injections, (SMBG) self-monitoring of blood glucose, (TAM) technology acceptance model

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