# Stepwise Self-Titration of Oral Glucose-Lowering Medication Using a Mobile Telephone-Based Telehealth Platform in Type 2 Diabetes: A Feasibility Trial in Primary Care

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## Abstract

### Background:

Telehealth-supported clinical interventions may improve diabetes self-management. We explored the feasibility of stepwise self-titration of oral glucose-lowering medication guided by a mobile telephone-based telehealth platform for improving glycemic control in type 2 diabetes.

### Methods:

We recruited 14 type 2 diabetes patients to a one-year feasibility study with 1:1 randomization. Intervention group patients followed a stepwise treatment plan for titration of oral glucose-lowering medication with self-monitoring of glycemia using real-time graphical feedback on a mobile telephone and remote nurse monitoring using a Web-based tool. We carried out an interim analysis at 6 months.

### Results:

We screened 3476 type 2 diabetes patients; 94% of the ineligible did not meet the eligibility criteria for hemoglobin A1c (HbA1c) or current treatment. Mean (standard deviation) patient age at baseline was 58 (11) years, HbA1c was 65 (12) mmol/mol (8.1% [1.1%]), body mass index was 32.9 (6.4) kg/m$^2$, median [interquartile range (IQR)] diabetes duration was 2.6 (0.6 to 4.7) years, and 10 (71%) were men. The median (IQR) change in HbA1c from baseline to six months was -10 (-21 to 3) mmol/mol (-0.9% [-1.9% to 0%]) in the intervention group and -5 (-13 to 6) mmol/mol (-0.5% [-1.2% to 0.6%]) in the control group. Six out of seven intervention group patients and four out of seven control group patients changed their oral glucose-lowering medication ($p$ = .24).

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## Abstract cont.

### Conclusions:

Self-titration of oral glucose-lowering medication in type 2 diabetes with self-monitoring and remote monitoring of glycemia is feasible, and further studies using adapted recruitment strategies are required to evaluate whether it improves clinical outcomes.

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