

Patient perspectives and experiences of basal insulin (BI) titration in type 2 diabetes (T2D): A US cross-sectional survey

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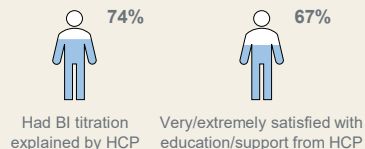
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ABSTRACT

Background: Appropriate BI titration in T2D is crucial for glycemic target achievement, but many people with T2D remain uncontrolled and their perspectives and experiences regarding titration are not well understood. **Objective:** To survey and analyze perspectives and experiences of BI titration in people with T2D initiating BI. **Methods:** Adults with T2D and ≥2 claims (≥30 days apart in the most recent 12-month period) in the Optum Research Database, who initiated a BI analogue between February and April 2021, were asked to complete a one-time, mailed survey. **Results:** Characteristics of the 416 survey responders were: 51% male, 71% white, mean age 70 years, mean BMI 32 kg/m², 72% >10 years T2D duration. Most responders (74%) had BI titration explained by their provider; 67% were very/extremely satisfied with the support received. One-fifth received no BI titration resources/training. Most responders documented BI dose (89%) and fasting blood glucose (FBG; 80%) daily. Only 35% met FBG targets; 58% had not and were still titrating and 7% had stopped using BI. 49% experienced hypoglycemia during titration. Mean Diabetes Treatment Satisfaction Questionnaire total score was 28 (range 0-36; higher score indicates greater satisfaction). Only 6% were categorized as “disengaged and overwhelmed”, 30% were categorized as “becoming aware, but struggling”, 39% as “taking action” and 26% as “maintaining behaviors and pushing further” by the Patient Activation Measure score. **Conclusion:** While many people with T2D initiating BI had received titration education/support, only one-third reached FBG target, suggesting novel strategies to achieve effective BI titration are needed.

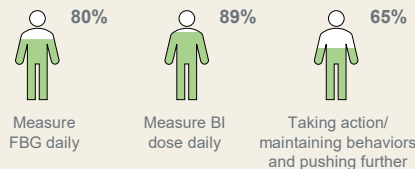
EXECUTIVE SUMMARY

Most responders received satisfactory titration education

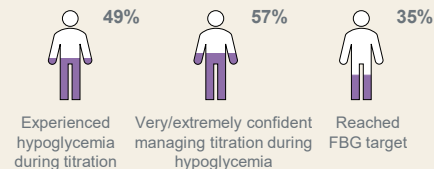


- 416 people with T2D initiating BI titration
- Survey of their perspectives and experiences of BI titration

Most responders took an active role in managing their diabetes



However, only one-third reached their FBG target



RESULTS

Responder characteristics

- Of the 416 survey responders: 51% male, 71% white, mean age 70 years, mean BMI 32 kg/m²; mean age at diagnosis was 51 years and 72% of responders had T2D for more than 10 years.
- The majority of responders (62%) had started BI at least 3 months prior to taking the survey.

Titration education and provider support

- Most responders (74%) had BI titration explained by their provider.
- 21% received no BI titration resources or training (Figure 1A).
- The majority (67%) were very/extremely satisfied with the support received; 5% were not at all satisfied (Figure 1B).

Glycemic control and hypoglycemia

- Most responders documented BI dose (89%) and fasting blood glucose (FBG; 80%) daily (Figure 2A).
- Only 35% of responders reached FBG targets; 58% had not and were still titrating, and 7% had stopped using BI.
- Half (204, 49%) experienced hypoglycemia during titration.
 - Of those, two-thirds experienced hypoglycemia more than once in one month (Figure 2B).
 - One-fifth (19%) of responders experienced severe hypoglycemia.
 - Almost two-thirds of those experiencing hypoglycemia had an event while awake (64%) and one-third had an event while sleeping (32%).
 - Most responders (57%) were extremely/very confident adjusting their insulin dose when experiencing hypoglycemia; only 10% were not at all confident (Figure 2C).

Satisfaction and Activation

- Mean Diabetes Treatment Satisfaction Questionnaire (DTSQ) total score was 28 (range 0-36; higher score indicates greater satisfaction).
- Mean Patient Activation Measure (PAM) total score was 65. PAM measures a patient's knowledge, ability, and confidence in managing their own health, on a 100-point scale with higher scores indicating greater activation levels.
- Patients were categorized into one of four activation levels according to their overall PAM score. Only 6% were categorized as “disengaged and overwhelmed” (Figure 3).

Figure 1. Education and support received during BI treatment initiation (A) Training/resources provided (B) Satisfaction with support from providers

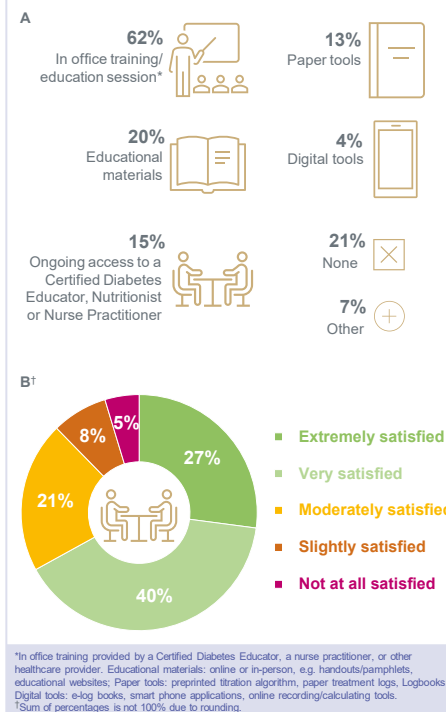


Figure 2. (A) Tracking of FBG, BI dose and lifestyle measures during BI titration. (B) Experience of hypoglycemia in one month during titration. (C) Confidence managing BI dose during hypoglycemia

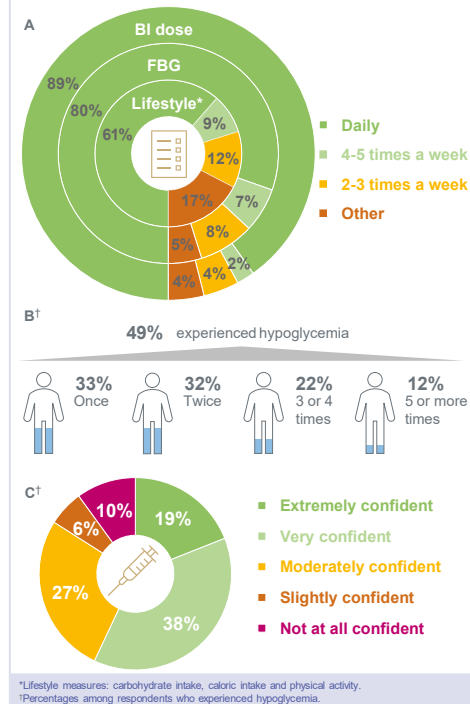
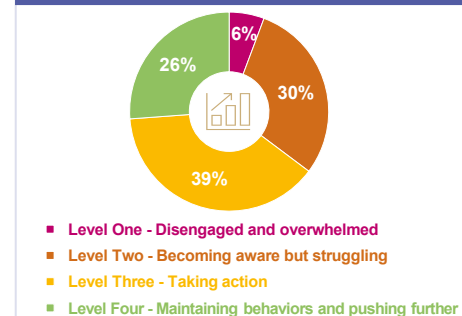


Figure 3. Patient activation



INTRODUCTION

- Glycemic target achievement is important to avoid long-term micro- and macro-vascular complications of diabetes.^{1,2}
- For people with T2D initiating basal insulin (BI) treatment, optimal titration of their BI dose is crucial to achieving glycemic control.
- However, many people with T2D on BI remain uncontrolled and their perspectives and experiences regarding BI titration are not well understood.³
- The aim of this survey was to evaluate perspectives and experiences of BI titration in people with T2D initiating BI.

METHODS

Participants

- Recent BI initiators were identified using enrollment, medical, and pharmacy records from Optum's proprietary research claims database.
- Inclusion criteria:
 - ≥2 medical claims with a diagnosis for T2D ≥30 days apart in the 12-month sample identification period (ending March 2021 for wave 1 and April 2021 wave 2).
 - ≥1 pharmacy claim for BI (insulin glargine 100 U/mL, insulin glargine 300 U/mL, insulin degludec or insulin detemir) in the most recent month of pharmacy data.
 - Aged 18 and older as of the index date (date of earliest BI fill).
 - 12 months of continuous enrollment with medical and pharmacy benefits prior to index date (baseline period).
- Exclusion criteria:
 - A pharmacy/medical claim for insulin during baseline period.
 - ≥1 medical claim with a diagnosis for type 1 diabetes during the baseline period.

Survey and analysis

- Identified BI initiators were invited by mail to complete the survey.
- Survey included questions on experience with BI titration: titration resources; healthcare provider (HCP) interactions; self-management of titration; clinical information; titration status and goal attainment.
- Of the 2,200 BI initiators invited to participate, 416 completed the survey and were included in the analysis.
- Descriptive statistics are presented for all analyses.

DISCUSSION

- This study addresses the lack of understanding about the patient experience with BI titration.
- Most people with T2D who responded to the survey were provided with training/resources at the time of BI titration initiation and the majority were satisfied with the support they received from HCPs.
- However, half of responders experienced hypoglycemia during titration and only one-third reached their FBG target, suggesting that effective BI titration proves difficult for many people with T2D.
 - Despite this, survey responders were generally satisfied with their treatment and reported being confident in managing their insulin dose.
- Novel tools/strategies are needed to help people with T2D optimize their BI titration and achieve glycemic targets.

CONCLUSION

While many people with T2D initiating BI had received titration education/support, only one-third reached the FBG target, suggesting novel tools and strategies to empower patients and enable effective BI titration are needed.

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FUNDING

Survey sponsored by Sanofi. The authors received editorial/writing support in the preparation of this poster provided by Lois Grant, MBIoSci, of Fishawack Communications Ltd, part of Fishawack Health, funded by Sanofi.

DISCLOSURES

Stewart Harris – Consultant: Abbott, AstraZeneca, Boehringer Ingelheim, Eli Lilly, Janssen, Merck, Sanofi; Research support: Abbott, AstraZeneca, Boehringer Ingelheim, Eli Lilly, HLS Therapeutics, Janssen, Novo Nordisk, Sanofi; Kamel Mohammadi – Personal fees and non-financial support: Abbott, AstraZeneca, Boehringer Ingelheim, Eli Lilly, Novo Nordisk, Sanofi; Monica Bertolini – Employee of Sanofi, holds stocks/shares in Sanofi; John White – Employee of Optum, providing consultancy to Sanofi; Maureen Carlyle – Employee of Optum, providing consultancy to Sanofi; Fang Liz Zhou – Employee of Sanofi, holds stocks/shares in Sanofi; John Anderson – Consulting/Advisory Boards: Sanofi, Novo Nordisk, Eli Lilly, AstraZeneca, Abbott Diabetes, Bayer, Alfa Sigma, Gelesis; Speakers Bureaus: Sanofi/Novo Nordisk, AstraZeneca, Eli Lilly, Bayer; Jochen Seufert – Honoraria for talks and/or consultancy and/or research funding: Aptope, AstraZeneca, Bayer, Berlin Chemie, Boehringer Ingelheim, Bristol-Myers Squibb (BMS), Eli Lilly, G-Dynamics, GlaxoSmithKline (GSK), Intarcia, Ipsen, Janssen, LifeScan, MedScape, Merck Sharp Dohme (MSD), Novartis, Novo Nordisk, OmniaMed, Pfizer, Roche, Sanofi, Servier, Takeda and Ypsomed