Real-life Experience of Patients Starting Insulin Degludec: A First-year Data from Specialized Diabetes Center in Bangkok

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Background: Insulin degludec, an ultra-long acting insulin analogue, has become available in Thailand from October 2016. Despite less nocturnal hypoglycemia from clinical trial results, the data from real-world settings are limited especially in Asian populations.

Objective: This study aimed to evaluate the real world effectiveness, safety, and satisfaction with insulin degludec prospectively in patients using this novel basal insulin from October 2016 to September 2017.

Methods: From October 2016 to September 2017, all patients starting insulin degludec at least 3 months were observed prospectively and quality of life was evaluated with WHOQOL-BREF. Level of satisfaction was evaluated with 7-point Likert scale. Glycemic fluctuation from paired iPro2 continuous glucose monitoring (CGM) obtained 4-6 weeks apart were also evaluated from a subset of patients with T1DM who switched from insulin glargine to insulin degludec.

Results: A total of 57 patients (T2DM 78%, females 52.6%, mean age 57.1±15.9 years, duration of diabetes 16.8±8.8 years, BMI 27.2±5.4 kg/m2, baseline A1C 9.3±2.3%, median duration of treatment 8 months) were included in the study. At 3 months, mean A1C reduction were 0.8% and the proportion of all patients attaining A1C ≤ 7% increased from 17.5% to 25.6%. Among previously insulin-treated patients, the daily median insulin dose decreased from 48 units per day to 38 units per day at 3 months. At 3 months, the frequency of self-reported nocturnal hypoglycemia was reduced by 46.9% (from 19.6% to 10.4%) and severe hypoglycemia was reduced by 41.6% (from 3.6% to 2.1%). Patient satisfaction showed a sustained improvement throughout the duration of study. In four T1DM patients with paired CGM data, insulin degludec provided greater reductions in intraday glycemic variability evaluated by mean amplitude of glucose excursion (MAGE) and interday glycemic variability evaluated by mean of daily differences (MODD). Paired CGM data also revealed a greater reduction of time outside the interstitial glucose target range.

Conclusion: Our data suggested that effectiveness of insulin degludec is compatible to the results seen in clinical trials with less risk of patients-reported nocturnal hypoglycemia, and a significant reduction in glycemic control. Patients also show higher treatment satisfaction. Interestingly, the daily median insulin dose decreases 20% in previously insulin-treated patients. More long-term data are needed to establish the role of this ultra-long acting insulin in real-world settings.

Keywords: Degludec, Theptarin, Insulin