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EFFECTIVENESS OF INSULIN DEINTENSIFICATION AND PREDICTORS OF GLYCEMIC CONTROL IN POORLY CONTROLLED TYPE 2 DIABETES MELLITUS: A RETROSPECTIVE COHORT STUDY IN MALAYSIAN PRIMARY CARE

Anuar Mohamad¹, Mohd Ali 'Imran Ab Rahaman², Ping Foo Wong¹, Mohammad Zainie Hassan³, Miguelinda Vitus Kimsin¹, Hiang Ngee Chan⁴, Megat Muhammad Haris Megat Zainal⁵

¹Klinik Kesihatan Cheras

²Pejabat Kesihatan Cheras

³Klinik Kesihatan Temerloh

⁴Klinik Kesihatan Batu Muda

⁵Klinik Kesihatan Muhibbah

INTRODUCTION

Insulin deintensification is an emerging strategy to reduce hypoglycemia and treatment burden in patients on multiple daily injection (MDI ≥3), with potential to improve adherence and glycemic control. However, evidence in poorly controlled type 2 diabetes mellitus (T2DM) remains limited. This study evaluated its effectiveness and identified factors associated with achieving adequate glycemic control following deintensification among patients with poorly controlled T2DM attending Malaysian primary care.

METHODOLOGY

A retrospective cohort study was conducted among 107 T2DM patients with hemoglobin A1c (HbA1c) >9%, attending Enhanced Diabetic Clinic at Cheras Health Clinic between 2021 and 2025. All patients on basal-bolus insulin (BBI) underwent deintensification. Multivariate logistic regression was performed to identify factors associated with achieving adequate glycemic control (HbA1c <7.5%). Changes in HbA1c following deintensification were assessed using paired t-tests.

RESULTS

Overall, 50.5% of patients achieved adequate glycemic control. Hypoglycemia events (AOR 9.5, 95% confidence interval [CI] 1.6–58.3; $p = 0.015$), MDI (AOR 9.6, 95% CI 1.4–67.1; $p = 0.023$) and Diabetes Medication Therapy Adherence Clinic (DMTAC) visits (AOR 1.1, 95% CI 1.0–1.2; $p = 0.039$) were significantly associated with achieving HbA1c <7.5%. Conversely, patients transitioned from BBI to premixed regimens were less likely to achieve HbA1c <7.5% (AOR 0.22, 95% CI 0.05–0.93, $p = 0.039$). All insulin deintensification strategies were associated with significant HbA1c improvements with transitioned from BBI to

premixed human insulin (mean difference -2.54%, 95% CI 1.77–3.31, $p < 0.001$, Cohen's $d = 1.09$), BBI to premixed analogue insulin (mean difference -3.38%, 95% CI 2.26–4.49, $p < 0.001$, Cohen's $d = 1.62$), BBI to basal insulin (mean difference -3.67%, 95% CI 1.79–5.54, $p = 0.004$, Cohen's $d = 2.05$).

CONCLUSION

Insulin deintensification is an effective strategy for improving glycemic control in poorly controlled T2DM. These findings highlight the importance of deintensification with careful consideration of hypoglycemia, MDI-related treatment burden, and patient engagement through regular DMTAC visits, which are integral to achieving optimal outcomes and support a personalized approach to diabetes management in primary care.

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IMPACT OF A RAPID OPTIMIZATION CLINIC ON GLYCEMIC CONTROL AND INSULIN DEINTENSIFICATION IN PATIENTS WITH DIABETES: AN EARLY RETROSPECTIVE AUDIT

Pang Hoy Yan¹, Varuna Shashti Dhevi Marimuthu¹, Amir Ridzwan Maula Mohd Nasir¹, Muhammad Firdaus Ghani¹, Chen Chiew Yee¹, Hidayatil Alimi Keya Nordin¹, Elliyyin Katiman¹

¹Endocrinology Unit, Tengku Permaisuri Norashikin (Kajang) Hospital

INTRODUCTION

Improving glycemic control while minimizing unnecessary insulin exposure is an important goal in diabetes management. The Rapid Optimization Clinic (ROC) was established as a structured multidisciplinary service to support therapy individualization, close follow-up, and timely insulin deintensification. This audit evaluated early changes in glycated hemoglobin A1c (HbA1c) and insulin treatment burden following ROC care over 3 months.

METHODOLOGY

We conducted a retrospective audit of routine clinical data from patients with diabetes managed in the ROC at a district hospital. Baseline and 3-month HbA1c and insulin data were extracted from non-electronic clinic records. Insulin dose was standardized as total daily dose (TDD) in units/kg/day. Insulin deintensification was evaluated primarily by change in TDD from baseline to 3 months and by the proportion of patients who discontinued insulin during follow-up. Paired analyses were performed for