

<0.001), higher mean glucose ($r = 0.58, p = 0.002$), and greater variability ($r = 0.54, p = 0.004$). Older age was associated with lower TIR ($r = -0.48, p = 0.014$) and higher mean glucose ($r = 0.44, p = 0.025$). Higher HbA1c correlated with lower TIR ($r = -0.36, p = 0.04$), higher TAR ($r = 0.35, p = 0.05$), greater variability ($r = 0.51, p = 0.006$), and increased target organ damage ($q = 0.55, p = 0.004$). BMI was not associated with TIR ($r = -0.18, p = 0.38$). Participants with ≥ 2 complications had lower TIR ($55.8 \pm 28.4\%$ vs $76.7 \pm 19.2\%$, $p = 0.073$), while insulin therapy was associated with higher TBR ($r = 0.42, p = 0.03$).

CONCLUSION

In Malaysian adults with T2DM, CGM metrics were similar between weekdays and weekends, indicating lifestyle differences had minimal impact on glycemic control. Longer diabetes duration, older age, higher HbA1c, multiple complications, and insulin therapy identified patients at highest risk for poor glycemic control, greater variability, and hypoglycemia. These findings support the use of CGM for risk stratification, individualized monitoring, and therapy optimization to reduce complications and hypoglycemia risk.

EP_A048

EUGLYCEMIC DIABETIC KETOACIDOSIS: CLINICAL INSIGHTS FROM A TERTIARY-CENTRE COHORT

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INTRODUCTION

Euglycemic diabetic ketoacidosis (EDKA) is an uncommon but potentially life-threatening complication of diabetes, characterized by significant ketoacidosis in the absence of marked hyperglycemia. The increasing use of sodium-glucose co-transporter-2 inhibitors (SGLT2i) has contributed to its rising incidence; however, data describing its clinical spectrum remain limited.

METHODOLOGY

We conducted a retrospective observational study of 19 patients admitted for EDKA between 2002 and 2025. EDKA was defined as metabolic acidosis with ketosis in the presence of blood glucose < 11 mmol/L. Demographic characteristics, comorbidities, biochemical parameters, triggers, and clinical outcomes were analyzed. Continuous variables were reported as mean (SD) or median (interquartile range [IQR]), and categorical variables as frequencies and percentages.

RESULTS

The cohort displayed a mean age of 52 (SD 22.2) years, with a slight female predominance (52.6%). The majority had underlying type 2 diabetes mellitus (89.5%). Other comorbidities include hypertension (63.2%) and chronic kidney disease (31.6%). Despite severe metabolic derangement, the mean blood glucose at presentation was modest at 9.3 (SD 3.38) mmol/L. Median pH was 7.1 (IQR 0.35) and bicarbonate 9.1 mmol/L, with a markedly elevated median anion gap of 25.3 mmol/L.

SGLT2i exposure was identified in 47.4% of patients, predominantly empagliflozin, with most initiated within 6 months. Nevertheless, infection was still the leading precipitant (68.4%), while 31.6% were adjudicated as having SGLT2i as the primary precipitating factor, probably due to underreporting during the diagnosis. Nearly half of the patients required intensive care (47.4%). The mean time to DKA resolution was 19 (SD 10.1) hours. Overall outcomes were favorable, with 89.5% of patients discharged and a mortality rate of 10.5%.

CONCLUSION

EDKA presents with severe metabolic acidosis despite deceptively normal glucose levels, increasing the risk of delayed recognition. Early assessment of ketones and acid-base status is essential in patients with diabetes presenting with unexplained metabolic acidosis, particularly among those receiving SGLT2 inhibitors, to facilitate timely diagnosis and management.

EP_A049

AUDIT OF STAFF KNOWLEDGE OF HYPOGLYCEMIA MANAGEMENT IN A DISTRICT HOSPITAL

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INTRODUCTION

Hypoglycemia, a frequent and potentially life-threatening consequence of anti-diabetic therapy, remains a major barrier to optimal glycemic control. Effective inpatient management depends on frontline staff knowledge and preparedness; thus, knowledge gaps may compromise patient safety. This audit evaluated staff knowledge of hypoglycemia management in a district hospital in Malaysia to identify areas for improvement.

METHODOLOGY

A cross-sectional audit was conducted among healthcare staff in a district hospital. A structured, modified questionnaire based on the Malaysian MEMS Inpatient Glycemic Guidelines was used. The 10-item questionnaire assessed definition, initial and subsequent management, reassessment, escalation, and documentation, yielding scores from 0 to 10. Descriptive statistics were used for analysis.

RESULTS

A total of 100 healthcare staff participated, comprising 6% doctors, 73% nurses, 14% MAs, and 7% pharmacists. Of these, 46% were from medical departments and 54% from non-medical departments; 71% were inpatient staff and 29% outpatient staff. Participants had a median working experience of 14 years. Overall knowledge levels were high, with pharmacists achieving the highest median score of 10 (interquartile range [IQR] 1), followed by doctors, nurses, and MAs, all scoring a median of 9 (IQR 0–1). Knowledge scores were similar between diabetic-trained and non-diabetic-trained staff, both recording a median score of 9 (IQR 1). The lowest performance was observed in key domains related to reassessment of blood glucose (41% wrong), drug-related considerations (17%), and subsequent management (15%). Median scores were comparable between inpatient and outpatient staff (9 [IQR 2] vs 9 [IQR 1]), and across staff with varying years of working experience. Staff from medical departments achieved slightly higher scores than those from non-medical departments (10 [IQR 1] vs 9 [IQR 1]).

CONCLUSION

Despite high overall knowledge, critical gaps remain in reassessment, drug-related risks, and stepwise management, warranting targeted education, protocol reinforcement, and re-audit to enhance patient safety.

EP_A050

AUDIT ON HbA1c TEST UTILIZATION AT HOSPITAL TELUK INTAN IN 2025

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INTRODUCTION

Hemoglobin A1c (HbA1c) is fundamental in the diagnosis and longitudinal monitoring of diabetes mellitus. Appropriate utilization is essential to ensure optimal glycemic control, cost-effectiveness, and laboratory efficiency. Regular audits are crucial for assessing adherence to testing intervals and for identifying gaps in diabetes management. The aim was to evaluate the utilization pattern and glycemic outcomes of HbA1c testing at Hospital Teluk Intan in 2025.

METHODOLOGY

A retrospective descriptive audit was conducted using Laboratory Information System data from 1 January to 31 December 2025. All HbA1c tests performed during the study period were included. Rejected samples and duplicate tests within 3 months for the same patient were excluded. Data were analyzed for test volume, inpatient versus outpatient distribution, age group, and glycemic control categories.

RESULTS

A total of 10,208 HbA1c tests were performed, with 987 (9.7%) rejected samples. Among valid requests, 3,561 (34.9%) were inpatient and 5,660 (55.4%) were outpatient. Adults accounted for 9,196 tests (90.1%), while paediatric requests were minimal ($n = 25$).

Regarding glycemic status, 4,502 (44.1%) had HbA1c <6.5%, and 828 (8.1%) were between 6.5 and 7.0%. Suboptimal control (7.0–10.0%) was observed in 2,443 patients (23.9%), while 1,448 (14.2%) demonstrated poor control (>10.0%). Overall, 38.1% of patients had HbA1c ≥7.0%, indicating inadequate glycemic control.

CONCLUSION

HbA1c testing at Hospital Teluk Intan is predominantly utilized in adult and outpatient settings. Despite substantial testing volume, over one-third of patients demonstrated suboptimal or poor glycemic control, underscoring persistent therapeutic gaps. These findings highlight the need for strengthened diabetes management strategies and targeted quality improvement initiatives to enhance glycemic outcomes and optimize resource utilization.

EP_A051

GLOBAL DIAGNOSTIC CRITERIA FOR GESTATIONAL DIABETES MELLITUS: A SCOPING REVIEW PROTOCOL TO INFORM POLICY IN MALAYSIA

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INTRODUCTION

Gestational diabetes mellitus (GDM) is a common pregnancy complication associated with adverse maternal and neonatal outcomes, including hypertensive disorders, caesarean delivery, macrosomia, and increased lifetime risk of type 2 diabetes. Despite its clinical importance, considerable international variation exists in GDM screening and diagnostic criteria. Multiple frameworks