Inpatient diabetes care and outcomes: a clinical audit in a Malaysian District Hospital

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ABSTRACT

Introduction: Effective inpatient care for people living with diabetes (PWD) is crucial for improving health outcomes and reducing complications. This audit aimed to evaluate inpatient diabetes care, regardless of admission reason, at a busy district hospital in Malaysia. **Materials and Methods:** A retrospective review was conducted on patient records from the general medical wards of the hospital of all people admitted between 1st and 20th July 2024. Records of patients with pre-existing or newly diagnosed diabetes were identified and reviewed in further detail. **Results:** 580 patient records were reviewed, identifying 183 (31.6%) PWD. Among them, 94 (51.4%) were female, and 89 (48.6%) were male. Most had type 2 diabetes (175, 95.6%), while 8 (4.4%) had type 1 diabetes. Common admission reasons included infections (48, 26.2%), cardiovascular disease (41, 22.4%), renal dysfunction (34, 18.6%), and diabetes-related emergencies (17, 9.3%). Diabetic ketoacidosis (DKA) accounted for 6 (3.3%) admissions, with one death from septic shock. Three PWD (1.6%) required intensive care. No cases of hyperosmolar hyperglycaemic state or inpatient hypoglycaemia were identified. The mean length of stay was 7.5 ± 6.3 days, with a mortality rate of 14 (7.7%), primarily due to their underlying medical conditions. Laboratory results showed a mean glucose of 11.5 ± 5.9 mmol/L at admission and creatinine of 232.2 ± 220.8 µmol/L. HbA1c was measured in 49 (26.8%) patients, with a mean of 9.1% ± 2.7%. Insulin was the most used medication for glycaemic control, increasing from 64 (35.0%) pre-admission to 136 (74.3%) during hospitalisation, then declining to 69 (37.7%) at discharge, with 4 (2.2%) new insulin initiations. Conversely, other agents were used less during hospitalisation. Metformin dropped from 69 (37.7%) pre-admission to 38 (20.8%) during admission and increased to 65 (35.5%) at discharge. Sulfonylureas decreased from 15 (8.2%) to 8 (4.3%) and 5 (2.7%) upon discharge. DPP-4 inhibitor declined from 5 (2.7%) to 2 (1.1%) but increased to 5 (2.7%) at discharge. SGLT2 inhibitor use dropped from 9 (4.9%) to 6 (3.3%) but increased to 14 (7.7%) post-discharge. GLP-1 RA use remained minimal (1, 0.5%). Only 6 (3.3%) patients, mostly with DKA, received an inpatient diabetes specialist review. Upon discharge, 74 (40.4%) were scheduled for follow-up at a district health clinic, though this number may be an underestimate due to incomplete documentation. **Conclusion:** Our audit identifies the need for structured data collection and evaluation of inpatient diabetes services to better address needs for PWD. Findings suggest a need for coordinated care, increased specialist involvement, and robust quality governance to improve acute diabetes care delivery and follow-up. Shifts in pharmacotherapy emphasise the importance of standardised protocols. Limitations include documentation gaps which may have underestimated management practices, emphasising the need for improved data collection, documentation and continuity of care. Strengthening inpatient management and follow-up is crucial to optimising outcomes and reducing complications in PWD.