

## Precipitating Factors, Presentation and Outcomes of Diabetic Ketoacidosis among Patients Seen at Moi Teaching and Referral Hospital, Eldoret Kenya

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### Abstract

**Background:** Diabetes Ketoacidosis (DKA) is a major complication of Diabetes Mellitus (DM) with a likelihood of high mortality if not managed appropriately. It is diagnosed with a triad of hyperglycemia, ketonemia and metabolic acidosis.

**Objectives:** To describe the precipitating factors, clinical presentation and outcomes of DKA among patients attending Moi Teaching and Referral Hospital (MTRH).

**Methods:** This prospective study involved 120 consecutively recruited participants diagnosed with DKA. Participants were drawn from the Emergency Department and Diabetes Outpatient clinic and followed up in the wards and Intensive Care Unit (ICU) in MTRH for up to 10 days. Focused history and physical examination was done. Blood sugar was measured daily; blood ketones and blood gases were measured on days 1,2,3 and 5. Precipitating factors, presentation and outcomes were summarised as frequencies and their corresponding percentages and presented in tables and charts.

**Results:** The median age of participants was 33 years (IQR 23, 44.5). Type 1 DM represented 63.3% and type 2 DM 34.2% of the patients.

The most common precipitating factors for DKA were; new onset undiagnosed DM (37.5%), missed medication (36.7%) and infection (35.8%). The most common presentation was dehydration (97.5%) with 49.2% of the patients having severe DKA while 22.5% had mild DKA. Urine and blood ketones for diagnosis of DKA were present in 46.4% and 100% of patients respectively. The median length of hospital stay was 6 days (IQR 5,7) with infection being a significant determinant (aOR 2.63). The number of days taken for DKA to resolve ranged from 1 to 5 days with a median period of 3 days (IQR 2,3). DKA in-hospital mortality was 9.2% with new onset DM being a significant determinant (uOR 5.19).

**Conclusion:** Some of the identified DKA precipitants in the study are preventable. The impact of DKA in MTRH is notable given the significant hospital stay and mortality.

**Recommendation:** We recommend implementation research studies that would develop and test different strategies to address the precipitants to prevent DKA. For the hospital to undertake an audit of current DKA management process with the aim of improving outcomes in terms of hospital stay and mortality.