



ORIGINAL RESEARCH PAPER

Medicine

CLINICAL PROFILE AND PRECIPITATING FACTORS OF DIABETIC KETOACIDOSIS IN ADULTS: A RETROSPECTIVE OBSERVATIONAL STUDY

KEY WORDS:

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ABSTRACT

Background: Diabetic ketoacidosis (DKA) is a life-threatening acute complication of diabetes. Understanding the clinical profile, precipitating factors, and outcomes can inform prevention strategies and optimize care. **Aim:** To describe the clinical profile, precipitating factors, and short-term outcomes of adult patients admitted with DKA at a tertiary care center. Department of general medicine, SRG Hospital & Jhalawar medical collage, Jhalawar **Methods:** We conducted a retrospective observational study of consecutive adult patients (≥18 years) admitted with DKA between July 2024 to June 2025. Data included demographics, type of diabetes, precipitating factors, biochemical parameters at admission, length of stay, and in-hospital outcome. Descriptive statistics were used. **Results:** A total of 30 patients were included (mean age 45.3 years; males 66.7%). The most common precipitating factor was infection (40.0%), followed by missed insulin and new-onset diabetes. Mean random blood glucose was 489 mg/dL, mean pH 7.17, and mean bicarbonate 10.8 mmol/L. Median hospital stay was 7.0 days. In-hospital mortality was 13.3%. **Conclusion:** In this single-center cohort, infection was the leading precipitant for DKA, and overall mortality was low. Targeted patient education and early infection management may reduce recurrence and improve outcomes.

INTRODUCTION

Diabetic ketoacidosis (DKA) is a serious acute complication of diabetes mellitus characterized by hyperglycemia, metabolic acidosis, and ketonemia. Timely identification of precipitating factors and early standardized management are key to improving outcomes. Single-center data from diverse regions remain valuable for benchmarking and quality improvement. This study describes the clinical profile, precipitating factors, and short-term outcomes among adults admitted with DKA to department of general medicine, SRG Hospital & Jhalawar medical collage, Jhalawar

MATERIALS AND METHODS

Study Design And Setting: Retrospective observational study at Department of Medicine, SRG Hospital & Jhalawar Medical collage, Jhalawar

Study Period: July 2024 to June 2025.

Participants: Adults (≥18 years) fulfilling standard diagnostic criteria for DKA (hyperglycemia, metabolic acidosis, and ketonemia/ketonuria). Patients with incomplete records or alternative primary acid-base disorders were excluded.

Data Collection: Demographics, type of diabetes, precipitating factors, admission biochemical parameters, hospital length of stay, and in-hospital outcome were abstracted from records.

Statistical Analysis: Descriptive statistics are reported as mean (SD), median (IQR), and proportions as appropriate. Analyses were conducted using a spreadsheet/database workflow.

RESULTS

Table 1. Demographic Profile

Variable	Value
Total patients	30
Mean age (years)	45.3

Male (%)	66.7
Type 1 DM (%)	23.3

Table 2. Precipitating Factors

Factor	n	%
Infection	12	40.0
Missed insulin	9	30.0
New-onset DM	5	16.7
Other	2	6.7
Myocardial infarction	2	6.7

Table 3. Biochemical Parameters At Admission

Parameter	Mean (SD)
Random blood glucose (mg/dL)	489 (99)
pH	7.17 (0.09)
Bicarbonate (mmol/L)	10.8 (4.2)
HbA1c (%)	10.3 (1.7)

Table 4. In-hospital Outcomes

Outcome	n	%
Discharged	26	86.7
Died	4	13.3

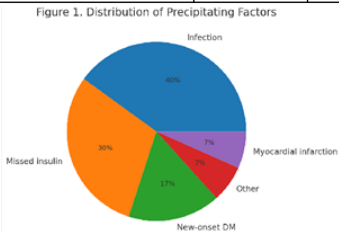


Figure 1. Distribution of Precipitating Factors

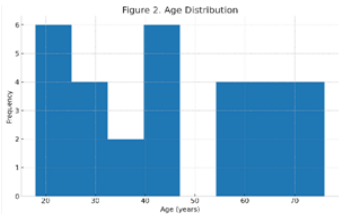


Figure 2. Age Distribution

DISCUSSION

In this single-center cohort of adult DKA admissions, infection emerged as the most frequent precipitating factor, followed by missed insulin doses and new-onset diabetes. The overall in-hospital mortality was low. These findings align with patterns commonly reported in similar resource-constrained settings and underscore opportunities for prevention through vaccination, early infection detection, and adherence support.

The biochemical profile at presentation reflected moderate to severe DKA by pH and bicarbonate ranges. Localized benchmarking of length of stay and mortality can inform protocol refinement and staff education. Future work could incorporate standardized severity grading, time-to-anion gap closure, and readmission rates.

CONCLUSION

Infection is the leading precipitant of DKA in our center, and timely, protocol-driven management is associated with low in-hospital mortality. Strengthened patient education and infection prevention may reduce recurrent DKA admissions.

Limitations

Retrospective single-Centre design, lack of standardized severity grading and limited outcome measures (no 30-day follow-up)

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