

A Systematic Review and Meta-Analysis of Diabetes Ketoacidosis in Ethiopia

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Abstract : Background: Diabetes is one of the common public health problems of the century that was estimated to affect one in a tenth of the world population by the year 2030, where diabetes ketoacidosis is one of its common acute complications. Objectives: The aim of this review was to assess the magnitude of diabetes ketoacidosis among patients with type 1 diabetes in Ethiopia. Methods: A systematic data search was done across Google Scholar, PubMed, Web of Science, and African Online Journals. Two reviewers carried out the selection, reviewing, screening, and extraction of the data independently by using a Microsoft Excel Spreadsheet. The Joanna Briggs Institute's prevalence critical appraisal tool was used to assess the quality of evidence. All studies conducted in Ethiopia that reported diabetes ketoacidosis rates among type 1 diabetes were included. The extracted data was imported into the comprehensive meta-analysis version 3.0 for further analysis. Heterogeneity was checked by Higgins's method, whereas the publication bias was checked by using Beggs and Eggers's tests. A random-effects meta-analysis model with a 95% confidence interval was computed to estimate the pooled prevalence. Furthermore, subgroup analysis based on the study area (Region) and the sample size was carried out. Result and Conclusion: After review made across a total of 51 articles, of which 12 articles fulfilled the inclusion criteria and were included in the meta-analysis. The pooled prevalence of diabetes ketoacidosis among type 1 diabetes in Ethiopia was 53.2% (95%CI: 43.1%-63.1%). The highest prevalence of DKA was reported in the Tigray region of Ethiopia, whereas the lowest was reported in the Southern region of Ethiopia. Concerned bodies were suggested to work on the escalated burden of diabetes ketoacidosis in Ethiopia.

Keywords : DKA, Type 1 diabetes, Ethiopia, systematic review, meta-analysis

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