

Diabetic ketoacidosis in children and adolescents with newly diagnosed type 1 diabetes in Tigray, Ethiopia: Retrospective observational study

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Abstract

Diabetic ketoacidosis (DKA) is the most severe acute complication of type 1 diabetes mellitus which results in increased risk of morbidity and mortality especially in developing countries. To assess prevalence and associated factors of diabetic ketoacidosis in children and adolescents with newly diagnosed type 1 diabetes in hospitals of the Tigray region, Ethiopia. A facility based retrospective observational study design was conducted in newly diagnosed type 1 diabetic children and adolescents up to the age of 18 years who were registered in 13 general and two referral hospitals from January 1, 2013 to December 30, 2017. The diagnosis of diabetic ketoacidosis was made with the criteria below, Children presenting with polysymptoms, weight loss, vomiting, dehydration, and also the indirect signs or effects of acidosis on respiratory and central nervous systems like Kussmaul breathing, lethargy or coma and biochemically random blood sugar level >11 ml/L, gluco-suria and urine ketone $>+1$ and diagnosed with type 1 diabetes for the first time. Descriptive, Mann-Whitney U and logistic regression analysis were carried out to describe and identify the associated factors with diabetic ketoacidosis. More than three-quarters, 258/328 (78.7%) of the newly diagnosed type 1 diabetes patients, presented with diabetic ketoacidosis at initial diagnosis. Median age of diabetic ketoacidosis patients was 11 years. The patients with diabetic ketoacidosis were younger than nondiabetic ketoacidosis patients (11 vs. 13 years, $P=0.002$). The mortality rate of diabetic ketoacidosis was 4.3%. Young age, presence of precipitating factors and symptoms of DKA/ diabetes were found to be highly associated with diabetic ketoacidosis at initial diagnosis.

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Biography

Fikaden Berhe has obtained her medical degree at Mekelle University, College of Health sciences in Ethiopia. She finished her residency in Paediatrics and child health department in the same university, she was the most dedicated, influential, top scorer chief resident.