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Chronic microvascular complication of type 1 diabetes mellitus and its predictors among children with type 1 diabetes mellitus in ethiopia; a single center experience: Ambi directional cohort study

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Introduction: Type 1 diabetes mellitus is the most common pediatric endocrine disorder. Poor glycemic control in diabetes mellitus can result in microvascular complications (retinopathy, neuropathy, and nephropathy). There is no study done in our setting either about prevalence of pediatric type 1 diabetes mellitus or chronic microvascular complication among these patients, which gap this study is expected to fill.

Objective: This study aimed to assess the risk and predictors of chronic microvascular complication of type 1 diabetes mellitus among children with diabetes at Haramaya University Hiwot Fana Compressive Specialized Hospital from September 10, 2021 to January 30, 2023.

Methods: A hospital-based Ambi directional cohort study was conducted. Survival data are described by follow-up time and Kaplan– Meier graph. To determine predictors associated with chronic microvascular complication we used a Poisson regression optimal model selected using the information criterion. All associations are tested at the 95% confidence level and a reported IRR P-value less than 0.05 is declared as a significant association between variables.

Results: A total of 124 children with type 1 diabetes mellitus were followed with total 407.5 years risk time. The overall incidence rate of chronic microvascular complication was 83 per 1000 population per year (95% CI: 59–116). The median time for detection of microvascular complication was 7 years after diagnosis. Being male with IRR 1.71 (95% CI: 0. 0.81–3.56), being at pubertal age IRR 1.91 (95% CI: 1.05–3.48), longer diabetes mellitus duration IRR 1.13 (95% CI: 1.07–1.28), and poor glycemic control IRR 1.50 (95% CI: 0.46–4.97) were found to be at higher risk for chronic microvascular complication.

Conclusion: There was high incidence of chronic microvascular complication of diabetes mellitus. Being pubertal age group and more than 3 years duration after diagnosis had statistically significant association with complication.

Keywords: pediatric diabetes mellitus, microvascular complication, Harar

Biography

Konjit Eshetu is a distinguished pediatrician and academic in the Department of Pediatrics and Child Health at the School of Medicine, College of Health and Medical Science, Haramaya University, Harar, Ethiopia. With a deep commitment to improving child health in Ethiopia, Dr. Eshetu has contributed extensively to pediatric care, research, and education. Her work spans both clinical and academic settings, focusing on childhood diseases, healthcare delivery, and the training of future healthcare professionals. Dr. Eshetu is recognized for her leadership in pediatric health initiatives and her dedication to advancing medical knowledge within her community.