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Time to optimal glycaemic control and prognostic factors among type 2 diabetes mellitus patients in public teaching hospitals in Addis Ababa, Ethiopia

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Background: Diabetes is a chronic, progressive disease characterized by elevated levels of blood glucose. Poorly managed diabetes leads to serious complications and early death. The prevalence of diabetes has been increasing over the past few decades. Ethiopia is one of African countries with the highest number of people living with diabetes. Studies conducted in Ethiopia and other countries mainly focused on level of glycaemic control at one point in time. Studies targeting the time that a patient stayed in a poor glycaemic level are lacking.

Objectives: To estimate time to first optimal glycaemic control and to identify prognostic factors among type 2 diabetes mellitus (T2DM) patients in public teaching hospitals in Addis Ababa, Ethiopia.

Methods: A hospital based retrospective chart review study was conducted from April to July 2018 at diabetes clinic of Addis Ababa's public teaching among randomly selected sample of 685 charts of T2DM patients who were on follow up from January 1 2013 to June 30 2017. Data was collected using pretested data abstraction tool. Data was checked, coded and entered to Epi-Info V.7.2.1.0 and exported to SPSS V.23.0 and STATA V.14.1 for analysis. Descriptive statistics is presented with frequency tables, Kaplan Meier plots and median survival times. Association was done using Log-rank test and Cox proportional hazard survival model, where hazard ratio, P-value and 95% CI for hazard ratio were used for testing significance and interpretation of results.

Results: Median time to first optimal glycaemic control among the study population was 9.5 months. The major factors that affect it are age group (HR=0.635, 95% CI: 0.486-0.831 for 50-59 years, HR=0.558, 95% CI: 0.403-0.771for 60-69 years and HR=0.495, 95% CI: 0.310-0.790 for >=70 years), diabetes neuropathy (HR=0.502, 95% CI: 0.375-0.672), more than one complication (HR=0.381, 95% CI: 0.177-0.816), hypertension (HR=0.611, 95% CI: 0.486-0.769), dyslipidemia (HR=0.609, 95% CI: 0.450-0.824), cardiovascular disease (HR=0.670, 95% CI: 0.458-0.979) and hospital patient treated at (HR=1.273, 95% CI: 1.052-1.541).

Conclusions: Median time to first optimal glycaemic control among T2DM patients is longer than expected which might imply that patients are being exposed to more risk of complication and death.

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