Does use of statins aggravate glycemic control in patients with type 2 diabetes: A retrospective cohort study

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The main purpose of the study was to assess glycemic control among statin users versus non-users in type 2 diabetes patients for a nine-year follow-up period.

Method: A retrospective cohort study was used on 204 study subjects in Tikur Anbesa Specialized Hospital. Medical records of eligible patients were followed from January 1, 2011 until the occurrence of the outcome, date of administrative censoring or April 24, 2019. An assumption for proportional hazard was met after testing through a graphical method by log minus log curve and the time-dependent Cox-model. A sensitively analysis and propensity score analysis was also performed. In this propensity-matched cohort, Kaplan-Meier analysis was repeated. An independent samples t-test was used to compare the mean of the continuous variables between the two cohorts. Moreover, incidence rates per 100 person-years were employed to crudely determine rates of the poor glycemic control. Lastly, Cox regression analysis was done to find out the effects of independent variables on the outcome variables.

Result: The mean fasting blood glucose of statin users and non-statin users were 176.2 mg/dL (standard error of mean [SEM]: 2.9 mg/dL) and 163.9 (SEM: 3.1 mg/dL, respectively. The Kaplan- Meier analysis showed that non-statin users had a better glycemic control than patients who were taking statins at all levels of time (Log Rank Chi-Square=19.1, p < 0.001). Besides this, after propensity score matching, there was a statistically significant difference in mean FBG time between statin users and non-statin users (t_{202} = 2.901, p<0.004). Concerning the predictors, there were statistically significant difference for glycemic control for ages ranging 50 to 54 years (adjusted hazard ratio [AHR] =0.401; 95% CI [confidence interval]: 0.195–0.823), metformin 1000 mg (AHR=0.410; 95% CI: 0.243–0.693) and simvastatin 40 mg (AHR=0.396; 95% CI:

0.229–0.686) compared to their corresponding controls (75 to 79 years and the absence of the medications,respectively

Conclusion: This study provides a benchmark for assessing the association of statins with poor glycemic control at the comprehensive specialized hospital. Moving forward, we call for the health care providers to closely monitor the glycemic control of diabetic patients taking statins and place a special effort in optimizing the treatment outcome.