Endocrinology-2013

OMICS Group Conferences
Accelerating Scientific Discovery

World Congress on
Endocrinology

August 26-28, 2013 Raleigh, North Carolina, USA

Statin and diabetes: Is there a link? A retrospective study on people known to have no diabetes at baseline per glucose tolerance test criteria

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Abstract

Background: Statins have been linked toincreased risk of type 2 diabetes (DM). Findings are not consistent, reduced progression to DM in people treated with statins have been reported (5). **Objective**: To evaluate the effect of statin on development of DM among people known to have no DM at baseline defined by 2 hours oral glucose tolerance test (OGTT) (Normal glucose tolerance or pre-diabetes at baseline).

Methods: Retrospective search of electronic medical record for OGTTs done during years 2000-2010 identified 2370 patients who had no DM at baseline and had further follow up with fasting glucose, A1c and/or repeat OGTT. Data on statin use were collected at baseline OGTT (current and former use), and during follow up (any time during follow up and/or end of follow up). Time to development of DM was evaluated using Kaplan-Meier estimates and risk was measured according to Cox proportional hazards models after adjusting for glycemia.

Results: Among 2370 patients, 64% were women, 78% were white. Mean age (range) was 54.1 yrs (18-90), mean (SD) BMI was 32 (7.8) kg/m^2. Median follow up was 30 months (Range: 0-155 months), some patients developed DM in < 1 month. In the cohort, 1245 patients (53%) never used statins, 214 patients (9%) were or had been on statin at baseline with no subsequent use after OGTT, 272 patients (11%) only used statin during follow up. The remaining 639 patients (27%) had statin use both at baseline and during follow up. Upon follow up, DM was diagnosed in 1119 patients (47%). After adjusting for glycemia, late statin use (baseline and/or subsequent use) was associated with significantly lower risk of diabetes HR 0.53 95% CI (0.47-0.60); $p < 0.001$. Patients with prior statin therapy (at baseline or before) and no record of statin use thereafter had significantly higher risk of developing DM compared to those with no statin use, HR 2.93, 95% CI (2.44-3.53), $p < 0.001$ (comparing prior statin use with late statin use, HR 4.79 (3.94-5.83) $P<0.001$).

Conclusion: Our findings support reduced incidence of DM in association with statin therapy; which might relate to statin therapy per se or to accompanying life style management. Interruption of statin use was associated with the highest risk to develop DM independent of baseline OGTT results; which might be related to unmeasured variables, such as social-economic status and life style.

Biography

Dr. Hamaty had achieved his medical degree from Aleppo University, Aleppo Syria in 1987. Then he pursued residency in Internal Medicine and fellowship in Endocrinology (both) at Wayne State University, in Detroit, Michigan, USA. He completed his fellowship in 1998. He subsequently served as a faculty at Wayne State University then moved to St. Cloud, Minnesota where he served as medical director of the diabetes center for 2 years after which he worked for seven in clinical practice at HealthPartners, in Minneapolis, Minnesota. During this period he pursed further education in Health Care Master of Business Administration (MBA) through University of St. Thomas, Minneapolis, Minnesota. Upon graduation from his MBA program, he relocated to Cleveland to join the Staff at Cleveland Clinic Department of endocrinology.

Dr. Hamaty is mainly interested in clinical practice and clinical research in diabetes and related conditions. He previously worked in basic research as well. His research has resulted in several publications.