Statins and Primary Prevention of Cardiovascular Events: A Population-Based Cohort Study

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Background and Objective: While the beneficial effect of statins in secondary prevention is well established, their effectiveness in primary prevention of cardiac events is questionable, when most evidence derives from randomized controlled trials and not from real-life data. The aim of our study was to evaluate the association between persistent use of statins and the risk of acute cardiovascular events among primary prevention patients in community settings.

Design: A population-based retrospective cohort among 126333 adults aged 45-75 years, who began statin therapy between 1998 and 2007 in Maccabi Healthcare Services, with minimum follow-up of 1year (median 3.9 years). Proportion of days covered (PDC) with statins was measured by the number of dispensed prescriptions during follow-up period. Study endpoint was occurrence of a major cardiovascular event, which comprised myocardial infarction or performance of a cardiac procedure such as bypass, percutaneous coronary intervention, cypher stent or cardiac valve as reported from hospital charge records.

Results: An adjusted Cox survival analysis indicated a significant negative association between persistence with statins and risk of incident cardiac events. The most persistent users (PDC >= 80%) had a hazard ratio (HR) of 0.63 (95% confidence interval (CI): 0.58-0.68) compared to non-persistent users (PDC <20%). Patients with lower PDC values of 20-40%, 40-60% and 60-80% had a HR of 0.74, 0.64 and 0.62 respectively. Similar results were found in a sub-analysis of patients with more than 5 years of follow up. An interaction analysis between persistence and other factors detected a stronger risk reduction among diabetic males.

Conclusions: Our large and unselected community based study supports the results of RCTs regarding the beneficial effect of statin treatment against cardiac events among primary prevention patients.