

High risk of cardiovascular episodes and low adherence to risk factors guidelines in a population with diabetes

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Background and aims: Although recent guidelines cover therapeutic goals, effective lipid management of patients with type 1 and type 2 diabetes to reduce cardiovascular disease (CVD) risk is still largely unattained. In the present study, we explored the electronic health records (EHR) at a specialized diabetes outpatient clinic to assess, in a real world database, the prevalence of poor lipid management in people with diabetes, the associated characteristics of this population, and the patterns of medication prescription.

Materials and methods: The present work is an observational retrospective study. The primary objective is to determine the prevalence of LDL-cholesterol above the guideline-recommended levels in type 1 and type 2 diabetes patients, while the secondary objective is to describe parameters related to clinical management of diabetes patients with dyslipidemia, including patient demographics and characteristics, use of lipid modifying therapies, and outcomes over time. Data collection was done by query of a dedicated EHR platform, from 2008 to 2018. Goal achievement was considered in relation to ESC/EASD Diabetes Guidelines. The range of collected parameters included were: age, sex, duration of diabetes, microvascular diabetes complications, CVD major risk factors, Framingham risk score, specific previous cardiac events or target organ damage. Relation to target objectives for lipid, blood pressure and glycemic control were also collected. Medication for lipid, blood pressure and glycemic control were explored, specifically statins, fibrates, ezetimibe, ACEI/ARB and other antihypertensives, antiplatelet agents, and oral antidiabetics. The clinical records of a subset of patients was reviewed manually, to assess data quality.

Results: There were 16.279 patients with type 1 and type 2 diabetes included (45% female, 78% type 2). 9% of type 1 and 66% of type 2 patients were over 65 years of age. The observed attainment of LDL guidelines goal were particularly low across types of diabetes, gender or age (from 1.6 to 16.4%), as well as for total cholesterol (from 38.5 to 69.0%), and triglycerides (from 44.3 to 81.5%). HDL goals (from 45.6 to 91.9%) were more often attained by type 1 diabetes patients. A subset of 1.769 type 2 diabetes patients had clinical records reviewed manually, to assure data quality. Most patients were at a very high-risk of cardiovascular disease, albeit having lipid-lowering medication, mainly statins. Of these, there were 371 CVD episodes already registered, with a distribution by gender that hints to a higher prevalence in men. Also, 67 patients (3.8%) died within the timeframe of observation.

Conclusion: Analyzed people with diabetes showed that this population has currently a very high risk of cardiovascular events, with lipid management goals being largely unattained, even when lipid lowering medication is present. Our results underline the need to identify and address real-world barriers for better lipid management and CVD prevention, which may include both aspects of awareness of adherence to guidelines and prescription habits, and education and doctor-patient communication. This study suggests that people with diabetes require more attention regarding CVD risk factors, and an intensified strategy to manage CVD risk according to European guidelines.

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