Abstract: P643

Association of adherence and treatment intensity of lipid-lowering therapy with cardiovascular outcomes and all-cause mortality in very high-risk patients in Germany

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Introduction: Both intensity and adherence to lipid lowering therapies (LLT) play an important role in effectiveness of the therapies in patients at risk for cardiovascular events.

Purpose: To evaluate the association of adherence and treatment intensity with cardiovascular outcomes and all-cause mortality in very high-risk patients (as defined by the current ESC guidelines) treated with statin and/or ezetimibe.

Methods: Retrospective cohort study was based on German health claims data (2010-2015) obtained from German Institute for Health Research (InGef) database and included patients = 18 years with an initial LLT treatment (statin and/or ezetimibe) in 2011-2013, and diagnoses of cardiovascular disease (CVD), stage 4 or 5 chronic kidney disease (CKD) or type 2 diabetes mellitus (DM). Patients must have had at least 2 LLT prescriptions in the first year to ensure intention of treatment. Follow-up period started 1 year after the second LLT prescription and continued until one of the events of the composite study endpoint (hospitalisation for myocardial infarction, unstable angina, ischemic stroke, heart failure, revascularization, or all-cause death) or 31.12.2015, whichever occurred earlier. Adherence was measured annually by the proportion of days covered (PDC) using prescription data. Treatment intensity was quantified based on expected LDL-C reduction as described in the American College of Cardiology and American Heart Association (ACC/AHA) 2018 guidelines. Adherence and treatment intensity were multiplied to create a combined measure of intensity after accounting for adherence.

Results: 73,257 patients of the CVD cohort were 68 (SD=12) years old, 59% men; the DM cohort (no CVD) had 13,584 patients, age 64 (10), 47% men; 472 patients in the CKD cohort (no CVD) were 65 (15) years old, 46% men. In a Cox proportional hazards model, each 10% increase in treatment intensity (LDL-C lowering) was associated with 18% lower risk of CV event in the CVD (HR 0.82, 95% CI 0.82-0.83), 21% - in the DM (HR 0.79, 95% CI 0.76-0.83), and 15% - in the CKD (HR 0.85, 95% CI 0.75-0.97) cohorts. Similarly, each 10% increase in adherence (PDC) was associated with 6% lower risk of CV event in the CVD (HR 0.94, 95% CI 0.93-0.94), 7% - in the DM (HR 0.93, 95% CI 0.91-0.94), and 7% - in the CKD (HR 0.93, 95% CI 0.89-0.97) cohorts. Each 10% increase in adherence-adjusted intensity was associated with 16% lower risk of CV event in the CVD (HR 0.84, 95% CI 0.83 - 0.85), 19% - in the DM (HR 0.81, 95% CI 0.78-0.85), and 17% - in the CKD (HR 0.83, 95% CI 0.72-0.96) cohorts. The models controlled for age, sex, Charlson comorbidity index and other cardiovascular risk factors at baseline.

Conclusions: A higher adherence and/or treatment intensity of LLT was associated with significantly lower risk of CV outcomes or all-cause death in German very high-risk patients. Strategies to tailor intensity to patient profile and improve adherence could further lower risk of CV events.
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