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No impact of statins on time to first COPD exacerbation or all-cause mortality

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Background and aim:

Statins have, due to their anti-inflammatory properties, been suggested to improve chronic obstructive pulmonary disease (COPD) outcomes. We aimed to investigate the effect of statins on time to first exacerbation and all-cause mortality in high-risk COPD outpatients.

Methods:

All outpatients with COPD seen at the Department of Respiratory Medicine, Hvidovre Hospital, Denmark in 2016 were identified and followed for 3.5 years in this retrospective, registry-based cohort study of time to first acute exacerbation of COPD (AECOPD) or death. AECOPD was defined as a course of oral corticosteroid and/or hospital admission. The association was estimated using time-varying crude and multivariable Cox proportional hazard regression.

Results:

The cohort comprised 950 COPD outpatients, mean (SD) age 71 years, and FEV1 44% predicted. The annual exacerbation rate was 0.88 (1.68) and 211 patients (22%) had a history of hospital admission for AECOPD in the 12 months prior to index date. 393 patients (41.4%) were defined as statin users, with 131 (33.3%) having filled the first prescription for statin after index date. Statin use was not associated with reduced risk of AECOPD or all-cause mortality. When stratifying for moderate and severe exacerbations, statin use did not have an increased HR for exacerbation of either severity (HR = 1.02 (95% CI 0.85 to 1.24; $p = 0.811$) and HR = 1.07 (95% CI 0.89 to 1.29; $p = 0.492$) respectively).

Conclusions:

We did not find any association between statin use and risk of AECOPD or all-cause mortality. The result adds to the evidence that statin treatment is not beneficial in COPD, unless prescribed according to current guidelines for cardiovascular diseases.