

Effect of Statins on COPD - A Meta-Analysis of Randomized Controlled Trials

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BACKGROUND: Much controversy persists regarding the place of statin drugs in the treatment of patients with COPD. This systematic review and meta-analysis sought to determine the clinical efficacy of statin therapy in COPD.

METHODS: We searched MEDLINE, EMBASE, the Cochrane Database, and PubMed for relevant clinical studies. Randomized controlled trials (RCTs) comparing the effects of statin drugs with placebo in COPD populations were included. Pooled estimates were calculated using a random-effects model. Heterogeneity was determined using the I² statistic.

RESULTS: Ten trials with a total of 1,471 patients were included. Statin treatment was associated with a larger improvement in exercise capacity, lung function, and St. George's Respiratory Questionnaire score compared with placebo, but there were no statistically significant differences in inflammatory markers, all-cause mortality, and safety outcomes; however, subgroup analysis indicated that statin drugs improved clinical outcomes in the subjects from trials enrolling patients with overt cardiovascular disease (CVD), elevated baseline C-reactive protein levels, or a high cholesterol level.

CONCLUSIONS: The findings from this systematic review suggest a role for statin drugs in patients with COPD and coexisting CVD, evidence of increased systemic inflammation, or hyperlipidemia with respect to improving exercise tolerance and pulmonary function. These findings need to be confirmed by RCTs specifically designed to test this hypothesis and identify appropriate patients for statin use.