Can simvastatin reduce COPD exacerbations? A randomised double-blind controlled study

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Shareable abstract (@ERSpublications)
Acute exacerbations of COPD cause a lot of suffering and healthcare burden. In this study, *p.o.* simvastatin 40 mg·day^{-1} reduced time to first exacerbation and exacerbation frequency in a double-blind, randomised controlled trial. https://bit.ly/3nHINet

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Abstract

Background Several studies have shown that statins have beneficial effects in COPD regarding lung function decline, rates and severity of exacerbation, hospitalisation and need for mechanical ventilation.

Methods We performed a randomised double-blind placebo-controlled single-centre trial of simvastatin at a daily dose of 40 mg *versus* placebo in patients with Global Initiative for Chronic Obstructive Lung Disease criteria grades 2–4 at a tertiary care pulmonology department in Austria. Scheduled treatment duration was 12 months and the main outcome parameter was time to first exacerbation.

Results Overall, 209 patients were enrolled. In the 105 patients taking simvastatin, time to first exacerbation was significantly longer compared to the 104 patients taking placebo: median 341 *versus* 140 days (log-rank test p<0.001). Hazard ratio for risk of first exacerbation for the simvastatin group was 0.51 (95% CI 0.34–0.75; p=0.001). Rate of exacerbations was significantly lower with simvastatin: 103 (41%) *versus* 147 (59%) (p=0.003). The annualised exacerbation rate was 1.45 events per patient-year in the simvastatin group and 1.9 events per patient-year in the placebo group (incidence rate ratio 0.77, 95% CI 0.60–0.99). We found no effect on quality of life, lung function, 6-min walk test and high-sensitivity C-reactive protein. More patients dropped out in the simvastatin group compared to the placebo group (39 *versus* 29).

Conclusion In our single-centre RCT, simvastatin at a dose of 40 mg daily significantly prolonged time to first COPD exacerbation and reduced exacerbation rate.