

## Can Simvastatin reduce COPD exacerbations? A randomized double blind controlled study

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### Abstract

Several studies have shown that statins have beneficial effects in chronic obstructive pulmonary disease (COPD) regarding lung function decline, rates and severity of exacerbations, hospitalization and need for mechanical ventilation. We performed a randomized double-blind placebo-controlled single-center trial of simvastatin at a daily dose of 40 mg versus placebo in patients with Global Initiative for COPD criteria II-IV at a tertiary care pulmonology department in Austria. Scheduled treatment duration was 12 months and main outcome parameter was time to first exacerbation. 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 vs. 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%) vs. 147 (59%),  $p = 0.003$ . The annualized exacerbation rate was 1.45 per patient-year in the simvastatin group and 1.9 in the placebo group (IRR 0.77, 95% CI 0.60 to 0.99). We found no effect on quality of life, lung function, six-minute walk test and high-sensitivity C-reactive protein. More patients dropped out in the simvastatin group compared to the placebo group (39 vs. 29). In our single-center RCT, simvastatin at a dose of 40 mg daily significantly prolonged time to first COPD exacerbation and reduced exacerbation rate.

### Biography

Peter Schenk is associate professor of internal medicine and Head of the pulmonology department of Landeskrankenhaus Hohegg, Austria. He is a specialist in pulmonology, internal medicine, and intensive care medicine. From 2018-2019 he was president of the Austrian Society of Pneumology and is now past president. In 2020 he was congress co-chair of the European Respiratory Society. He published 54 original scientific manuscripts in peer-review journals with total 337,5 impact factors and received 15 scientific awards. In addition, he completed a university course of management in health care systems and received a degree of MSc and MBA.

