

# Abstract

## Analysis of adherence to application technique in COPD patients

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**Introduction and aims:** Adherence is an essential component of patient care and is also important for achieving treatment goals. Poor adherence leads to increased morbidity, mortality and healthcare expenditures. The aim of this study was to analyze adherence to application technique in patients with chronic obstructive pulmonary disease (COPD), taking into account inhaler device and patient characteristics.

**Methods:** The Czech Multicenter Research Database of COPD, non-interventional observational prospective study, was used as a source of clinical data. Adherence to the application technique was evaluated using Five Steps Assessment. Patients were recruited to the study from August 2013 to December 2016 by 14 outpatient secondary health care centers providing respiratory physician-based care to patients with COPD throughout the Czech Republic. Each of the five consecutive steps was evaluated by a trained healthcare professional. The study evaluated dry powder inhaler and pressurised metered-dose inhaler. Physical and laboratory examination, medical records, and patient interviews were used to obtain sociodemographic and health characteristics.

**Results:** 546 patients were included in the study. The study population was predominantly male (75%), the mean age of the participants was 66.7 years, and the mean forced expiratory volume in 1s (FEV<sub>1</sub>) was 44.7 %. Only 30% of patients presented their application technique without any erroneous steps. The most problematic steps were breathing out before inhalation and the actual inhalation maneuver. The total number of errors was similar for both types of inhalers. An association was found between reduced adherence to the application technique and some patient characteristics.

**Conclusions:** Adherence to the application technique was insufficient. Therefore, patients should be repeatedly instructed by appropriately trained medical staff, focusing on the most problematic steps.

**Key words:** adherence, inhalation/application technique, COPD.