

COPD 2018: Association between the beliefs about inhaled medication and inhalers mishandling in COPD outpatients University of Minho, Portugal

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Objectives: In COPD patients, inhalers misuse is a common problem in real life. The objective is to evaluate if the patients' beliefs about inhaled medication are associated with inhaler technique. **Methods:** COPD out-patients diagnosed according to GOLD criteria, were recruited consecutively. A survey of demographic and clinical data and the cross-cultural adaptation of the Beliefs about Medicines Questionnaire (BMQ-specific) into Portuguese was applied. Participants were invited to demonstrate the use of their Inhaler Devices (ID), and inhalation technique was assessed by using previous defined checklists of steps for a correct inhalation technique. Errors considered critical were likely to make therapy useless. Ability to use inhalers was defined as the quotient between the number of inhalers without critical errors and the total number of inhalers used. A statistical analysis was then performed with linear regression modelling. **Results:** The study included 250 subjects (mean age = 66.64 years, 76.4% males) using 10 different IDs. Misuse due to critical errors were observed in 47.4% of the women and 33.5% of men, in a total of 92 patients. In this group there was a statistically significant correlation between the BMQ Necessity score and number of critical errors ($r = -.289$) or the ability to use IDs ($r = .310$). The patients' beliefs about the necessity to use IDs were respectively significant direct and inverse predictors of ability to use inhalers ($\beta = .310$; $p = .003$; $r^2 = .096$) and misuse due to critical errors ($\beta = -.289$; $p = .005$; $r^2 = .084$). In this group of patients the beliefs about inhalers' need account for 9.6% of the observed variance in the ability to use their IDs. **Conclusions:** Physicians should focus their attention on patients who inadequately use inhalers and take in account their beliefs about the need of inhaled medication. **Background and Objective:**

COPD is currently one of the most important health problems internationally. Inhaled medications are the backbone of COPD management, and therapeutic success depends on maintaining a proper inhalation technique. There is growing evidence of the misuse of inhalers as a common problem worldwide. It may be associated

with an increase in the rate of severe COPD exacerbations (ECOPD), but the impact of improper use of inhalers on COPD outcomes is currently unknown. In a country where patients have good access to health care services and effective treatment, any change in treatment outcomes should aim to improve the technique of inhalation. This can be one of the main cost / benefit measures improving health care for COPD patients.

In 1965 Saunders published the first article in the BMJ describing the misuse of inhaled drugs. In fact, the misuse of inhaler (ID) devices in obstructive airway disease is an old problem and has not improved in the past 40 years, despite the gradual technical improvement of ID. Currently, up to 94% of patients have demonstrated improper handling of inhalers in clinical studies. Teaching and maintaining proper inhalation technique has a positive impact on the disease and patient outcomes. should remain a constant concern of any healthcare professional involved in the management of COPD patients.

Knowledge of the difficulties and obstacles which hinder a good inhalation technique is of paramount importance for developing any educational intervention concerning the correct use of ID. However, this can be a very difficult task. Evaluating the inhalation technique is complex and always somewhat subjective, and there is no consensus among researchers regarding the definition of critical errors and the standardization of inhalation technique checklists.

The aim of this study was to evaluate the inhalation technique in stable COPD ambulatory patients, as there was a lack of information in the Portuguese population. We wanted to assess whether the type of ID, the preference or number of IDs used by each patient, the demographic, clinical or functional characteristics of patients, and patients' beliefs about inhaled medications are associated with correct inhalation technique. This last aspect has never been studied, to our knowledge.

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