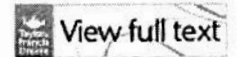


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The influence of type of inhalation device on adherence of COPD patients to inhaled medication.

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Abstract

OBJECTIVE: To study the influence of type of inhalation device on medication adherence of COPD patients.

METHODS: Adherence to inhalation medication of 795 patients was recorded from pharmacy records over 3 years. It was expressed as percentage and deemed good at ≥ 75 - $\leq 125\%$, sub-optimal ≥ 50 - $<75\%$, and poor $<50\%$ (underuse) or $>125\%$ (overuse). Since most patients used more than one device, 1379 medication periods were analyzed.

RESULTS: Patients using a **Metered Dose Inhaler** (MDI) or Diskus had a 2.3-fold and 2.2-fold increased risk, respectively, of suboptimal adherence versus good adherence, compared to Handihaler and a 2.1-fold and 2.2-fold increased risk, respectively, of underuse versus good adherence compared to Handihaler. Turbuhaler, MDI, Respimat had a 7.9-fold, 3.5-fold, and 2.0-fold increased risk, of overuse versus good adherence compared to Handihaler.

CONCLUSIONS: In COPD, adherence to inhalation medication is device-related. Overuse was most pronounced for devices without a **dose counter**, devices with the ability to load a dosage without actual inhalation, or devices lacking feedback of correct inhalation. The design of the device seems to be related to underuse and overuse of inhaled medication. Future research might investigate whether prescribing a different device with similar medication improves therapy adherence.

KEYWORDS: Adherence; COPD; inhalation device; lung function

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