

MEETING ABSTRACT

Open Access

In vitro performances of a valved holding chamber with inhaled corticosteroids

Nabile Boukhattala*, Thierry Porée, Lissbeth Leon-Bollotte

From 3rd WAO International Scientific Conference (WISC) 2014
Rio de Janeiro, Brazil. 6-9 December 2014

Background

In young children with asthma, it is recommended to use pressurised metered dose inhaler (PMDI) with a valved holding chamber (VHC). The objective of this study was to evaluate the performances of a VHC with inhaled corticosteroids.

Methods

In this study, the VHC called Tipshaler (Protec'som, France) was evaluated with fluticasone (Flixotide[®], 50µg/dose, GSK, France) and beclomethasone (QVAR[®], 100µg/dose, MEDICIS, Canada). The method according to the European Pharmacopoeia used a constant flow rate (30 L / min) was used. Particle size distribution was measured using a NGI cascade impactor (Copley Scientific, Nottingham, United Kingdom). The fluticasone and beclomethasone concentrations were assayed by spectrophotometry at 236 nm and 239 nm respectively.

Results

In the trachea, the mass of fluticasone was higher with pMDI alone in comparison with VHC ($20 \pm 0,6 \mu\text{g}$ vs $0,9 \pm 0,3 \mu\text{g}$, $p < 0,05$). The fine particle dose of fluticasone was similar with pMDI alone compared to VHC ($26 \pm 2 \mu\text{g}$ vs $24 \pm 1 \mu\text{g}$). Concerning beclomethasone, in the trachea the mass of drugs was higher with pMDI alone in comparison with VHC ($11,6 \pm 0,4$ vs $1,2 \pm 0,2$, $p < 0,05$). In addition, deposition of fine particles of beclomethasone was similar with pMDI alone in comparison with VHC ($77 \pm 1 \mu\text{g}$ vs $75 \pm 1 \mu\text{g}$, $p < 0,05$).

Conclusions

The use of valved holding chamber reduces the deposition of particles of inhaled corticosteroids in the trachea and allows efficient lung deposition of drugs.

Published: 8 April 2015

doi:10.1186/1939-4551-8-S1-A195

Cite this article as: Boukhattala et al.: In vitro performances of a valved holding chamber with inhaled corticosteroids. *World Allergy Organization Journal* 2015 **8**(Suppl 1):A195.

Submit your next manuscript to BioMed Central and take full advantage of:

- Convenient online submission
- Thorough peer review
- No space constraints or color figure charges
- Immediate publication on acceptance
- Inclusion in PubMed, CAS, Scopus and Google Scholar
- Research which is freely available for redistribution

Submit your manuscript at
www.biomedcentral.com/submit



Laboratoire Protec'som, France



© 2015 Boukhattala et al; licensee BioMed Central Ltd. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited. The Creative Commons Public Domain Dedication waiver (<http://creativecommons.org/publicdomain/zero/1.0/>) applies to the data made available in this article, unless otherwise stated.