

Can a new portable valved holding chamber (VHC) for use on the go improve the delivery and reduce side effects of a new combination albuterol/budesonide inhaler?

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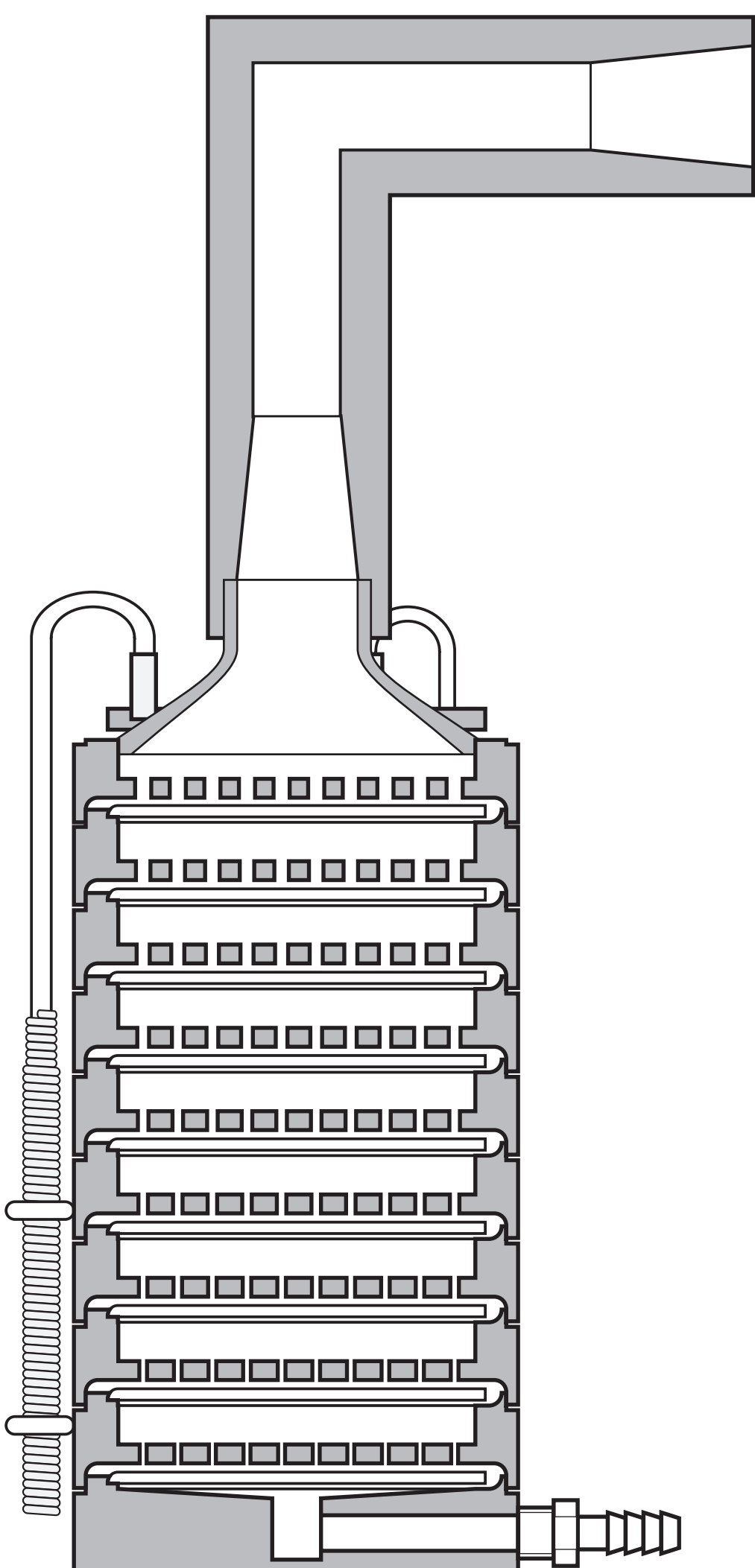
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RATIONALE

- The introduction of a new anti-inflammatory reliever (AIR) inhaler for the combined treatment of symptoms and prevention of bronchoconstriction may trigger changes in current practice.
- Asthma guidelines recommend that to further optimize MDI drug delivery and minimize potential side effects a valved holding chamber (VHC) / spacer should be used.
- This laboratory study compared the particle size distribution and potential airway delivery of the combined albuterol/budesonide (AIRSUPRA® (albuterol 90µg/budesonide 80µg)) metered dose inhaler (MDI) when administered alone versus an MDI + a new portable VHC (AeroChamber2go*, A2GO) and a widely prescribed standard VHC (AeroChamber Plus* Flow-Vu*, ACFV).

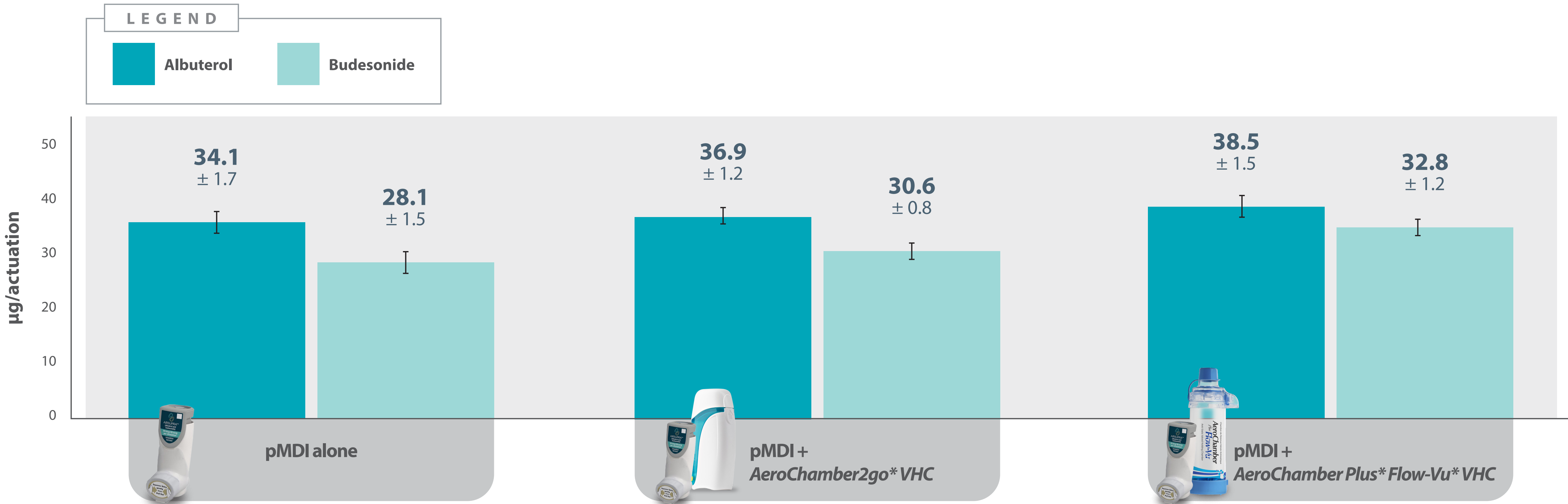
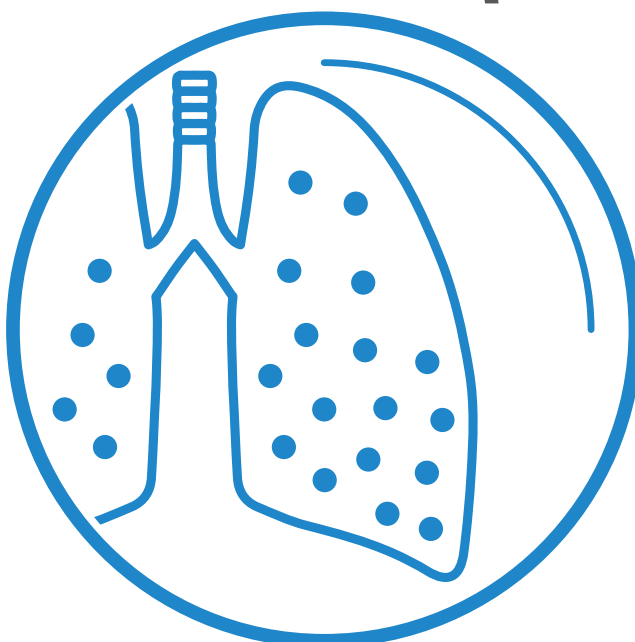
METHODS

- Particle size distribution of the medications within the MDI, with and without the 2 VHCs, evaluated
- Andersen cascade impactor, with five replicate measurements
- HPLC used to quantify the mass of medication in each size fraction
- Focused on the fine particle mass (FPM, <4.7 µm), the portion expected to reach the lungs, and the coarse particle mass (CPM, >4.7 µm), likely to deposit in the upper airways

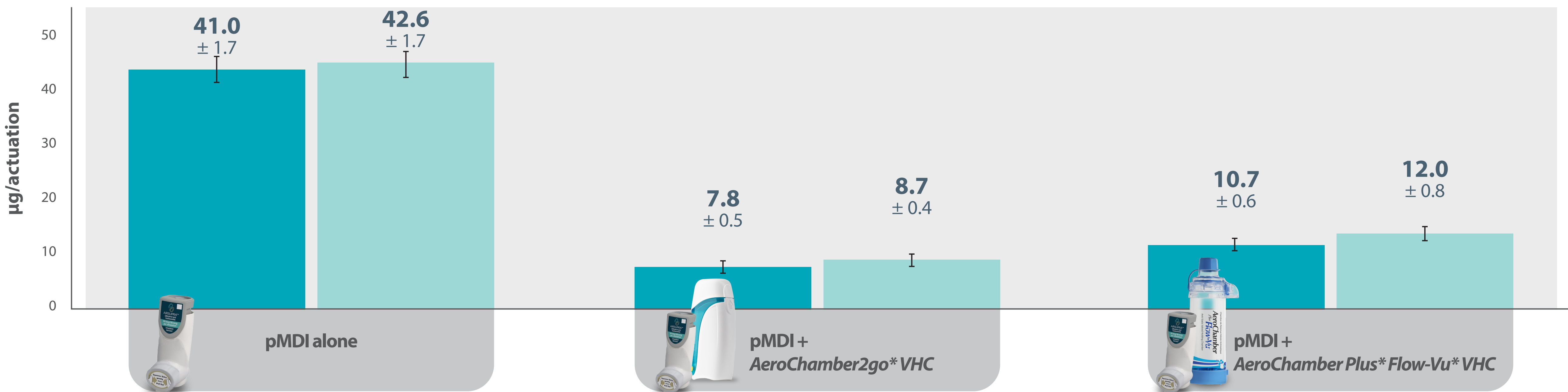


RESULTS

FPM <4.7µm



CPM >4.7µm



CONCLUSIONS

- **AeroChamber2go* and AeroChamber Plus* Flow-Vu* VHCs provided similar FPM, compared to the MDI alone.**
- Additionally, **the VHCs reduced the CPM associated with oropharyngeal deposition**, which could be particularly important with inhaled corticosteroids like budesonide. If deposited in the oropharyngeal region, absorption into the bloodstream increases the potential for systemic side effects.
- Reduction in upper airway deposition should help lessen concerns about systemic steroid delivery perhaps improving adherence to therapy while lowering the risk of unwanted systemic side effects.