



In Vitro Performance of Fluticasone/Salmeterol Pressurized Metered Dose Inhaler in Combination with Three Different Valved Holding Chambers

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SUMMARY. Spacer devices are used to optimize airway aerosol deposition from pressurized metered-dose inhalers (pMDI). The *in vitro* performance of the combination fluticasone/salmeterol pMDI alone and connected to 3 different valved holding chambers (VHC) was compared by measuring impactor entry port ("throat") deposition and fine particle dose (FPD) of each medication. Salmeterol (SX) and Fluticasone (FP) throat deposition was reduced over 90 % by all VHC compared to pMDI alone ($p < 0.001$). The FPD obtained from pMDI alone and connected to VHCs Vortex[®], AeroChamber Plus[®] and Able Spacer[®] for Salmeterol (25 μg nominal dose) were 12.2 ± 0.7 , 12.5 ± 0.5 , 11.6 ± 0.8 , and 7.9 ± 0.9 μg , respectively. For Fluticasone (125 μg nominal dose) the FPD were 42.5 ± 2.6 , 36.3 ± 3.1 , 39.8 ± 2.4 , and 22.8 ± 3.5 μg , respectively. There were no statistical differences in FPD between devices, except for AbleSpacer[®] that delivered a lower FPD for both drugs ($p < 0.001$).

KEY WORDS: Aerosol, Distribution Particle size, Fine particle dose, Fluticasone and Salmeterol, Valved holding chamber.

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