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PRESENTING CLINICAL EVIDENCE-BASED MEDICINE

Scintigraphic Assessment of Radio-Aerosol Pulmonary Deposition with the Acapella Positive Expiratory Pressure Device and Various Nebulizer Configurations

Authors: Mesquita FO, Galindo-Filho VC, Neto JL, Galvão AM, Brandão SC, Fink JB, Dornelas-de-Andrade A.

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Methodology: The aim of this study was to evaluate how the placement of a nebulizer either distal or proximal to the Acapella device impacted the deposition of nebulized aerosol compared to a nebulizer alone in normal subjects. This information is vital as Acapella is commonly used with a nebulizer.

Experiment: 10 healthy male subjects participated in the study. Three different configurations were tested, nebulizer proximal to Acapella, nebulizer distal to Acapella and nebulizer alone. A radio-labeled aerosol was used and where it populated in the lungs was measured with scintigraphy after each use. All subjects used all three configurations.

Results and Implications: Aerosol deposition was similar between the right and left lung in all configurations. Total lung deposition was less with the nebulizer placed distal to the Acapella device. A similar amount of nebulized medication was delivered by placing the nebulizer proximally, between the mouth piece and the device, as compared to using a nebulizer alone.
