Lung Deposition of Radio-tagged Aerosol Delivered Using the Aerogen® Solo During Different Modes of Mechanical Ventilation


Background

There is a lack of data on the pulmonary deposition of aerosolized medicines during different modes of mechanical ventilation.

Objective

The aim of this study was to compare lung deposition of radio-tagged aerosol delivered using the Aerogen Solo during pressure support ventilation and volume control ventilation.

Materials and Methods

Aerosol delivery and deposition analysis

- The reservoir of the Aerogen Solo was filled with radio-tagged aerosol (2 mCi/3 mL)
- Pulmonary aerosol deposition was evaluated using planar scintigraphic imaging
- Pulmonary deposition was measured overall, and separately in the left and right lungs

Design: Randomized, comparative, double-blind study

- Adult patients with healthy lung function admitted to the ICU following neurological surgery

Randomisation

Pressure support ventilation: n=10
Volume control ventilation: n=9

Lung deposition of aerosol delivered using the Aerogen Solo during pressure support and volume control ventilation was 10–15%.

Nominal dose deposited in the lungs (mean ± standard deviation)

- Pressure support ventilation: 10.5% (±3.0)
- Volume control ventilation: 15.1% (±5.0)

Representative scintigraphic image of pulmonary aerosol deposition (pressure support ventilation)

ICU, intensive care unit; PFS, proximal flow sensor

Want to know more? Scan or click the QR code