primary studies - published RCT

Comparison of drug delivery from conventional versus "Venturi" nebulizers.

Code: CN-00146588 **Year:** 1997 **Date:** 1997 **Author:** Devadason SG

Study design (if review, criteria of inclusion for studies)

Randomised, cross-over study. Single centre.

Participants

18 children with cystic fibrosis (3-16 yrs)

Interventions

inhaled dose from a conventional jet nebulizer (Acorn) used both with and without a storage chamber (Mizer), compared to two Venturi nebulizers (Ventstream and Pari LC). Filters were attached to the four nebulizer systems, containing salbutamol, and children inhaled through these devices.

Outcome measures

The quantity of drug collected on the filter was assessed using ultraviolet spectrophotometry. The particle size distribution of the aerosol from each nebulizer system was measured using laser diffraction

Main results

Inspiratory filter deposition using the Acorn was lower than the Acorn with Mizer, and both Venturi nebulizers. Filter deposition using the Acorn with Mizer was lower than the Pari LC. No trend with age, height or weight was noted using any nebulizer. Aerosol particle size using the Ventstream was lower than the other nebulizer systems. Drug output from both Venturi nebulizers was more efficient than from the jet nebulizer, used with and without the storage chamber, during inhalation by children with cystic fibrosis. The inhaled dose did not change with the patient's age or size using both types of nebulizer.

http://www.mrw.interscience.wiley.com/cochrane/clcentral/articles/588/CN-00146588/frame.html

See also

The European respiratory journal : official journal of the European Society for Clinical Respiratory Physiology YR: 1997 VL: 10 NO: 11

Keywords

Adolescent; Albuterol; Bronchodilator Agents; Child; Inhalation OR nebulised; nebuliser; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Salbutamol; Adrenergic beta-Agonists; Respiratory System Agents;