primary studies - published RCT

Comparison of lung deposition of colomycin using the HaloLite and the Pari LC Plus nebulisers in patients with cystic fibrosis.

Code: PM12876172 **Year:** 2003 **Date:** 2003 **Author:** Byrne NM

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

Randomised crossover trial

Participants

15 participants with CF. All had chronic PsA requiring daily nebulised colistin. Mean age 14.1 years (range 7 - 23 years). Mean (SD) FEV1 56.5 (18.9)%.

Interventions

Inhalation of one mega unit of colistin in 3 ml diluent, labelled with technetium-99m DTPA, was used to assess lung deposition. The Pari was nebulised to dryness and one button press of the HaloLite was completed. Following a seven day washout period, patients inhaled colistin twice daily for seven days through the first device. This procedure was repeated with the alternative device

Outcome measures

Lung deposition (radio-labelled colistin) Time to nebulise Respiratory function pre- and post-nebuliser Colistion levels in sputum at 1 and 4 hours PsA load in sputum at 1 and 4 hours Residual drug volume in nebuliser

Main results

Lung uptake of radiolabelled colistin was significantly higher with the Pari. However, lung uptake calculated as a percentage of the amount of drug used was significantly higher for the HaloLite. Time to nebulise was significantly shorter with the HaloLite. Sputum levels of colistin were higher following use of the Pari; this was close to significance.

Authors' conclusions

The manufacturer's recommended dosages for nebulising antibiotics with a HaloLite result in a lower delivery than patients receive when using a Pari nebuliser. The concept of adaptive aerosol delivery has several theoretical advantages but the recommended doses for the HaloLite need to be modified in order to improve effectiveness.

http://dx.doi.org/10.1136/adc.88.8.715

See also

Arch Dis Child. 2003 Aug;88(8):715-8.

Keywords

HaloLite; Anti-Bacterial Agents; Colistin; Inhalation OR nebulised; nebuliser; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Bacterial Infections; Respiratory Tract Infections; Respiratory Tract Diseases; Infection; Pseudomonas aeruginosa; Pseudomonas; other anti-bacterial agents;