primary studies - published RCT

Efficacy, safety, and local pharmacokinetics of highly concentrated nebulized tobramycin in patients with cystic fibrosis colonized with Pseudomonas aeruginosa.

Code: PM17536871 **Year:** 2007 **Date:** 2007 **Author:** Lenoir G

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

4 weeks. Multicentre (13 sites, 4 countries) RCT, double-blind, placebo-controlled trial. Parallel design.

Participants

Diagnosed CF + P. aeruginosa. 59 participants. 32 Males. Age range 6 to 30 years.

Interventions

Pari LC Plus nebuliser and Pari TurboBoy compressor. Tobramycin 300 mg (Bramitob®) or placebo twice daily for 4 weeks followed by a 4-week run-out phase.

Outcome measures

FEV1, FVC, FEF25-75, P. aeruginosa susceptibility, ototoxicity, renal function, adverse events.

Main results

FEV(1) significantly increased from baseline in the tobramycin group compared with no change in the placebo group: the absolute difference between groups (intent-to-treat population) of predicted normal was 13.2% at week 2 (p = 0.002) and 13.3% at week 4 (p = 0.003). Significant differences in favor of the tobramycin group were also observed for FVC and FEF(25-75%). The microbiologic results at the end of the treatment period (P. aeruginosa-negative culture, persistence, superinfection) showed a significantly better outcome in the tobramycin group compared with placebo (p = 0.033). The effects of tobramycin on pulmonary function and microbiology were not maintained at the end of the run-out phase. Mean sputum concentrations of tobramycin after the first dose (695.6 +/- 817.0 microg/mL) were similar to those measured after the last dose (716.9 +/- 799 microg/mL) and were superior to the detected specific MIC(90). The proportion of patients with drug-related adverse events was lower in the tobramycin group and no signs of renal or auditory toxicity were observed.

Authors' conclusions

The 4-week administration of a highly concentrated TSI significantly improved pulmonary function and microbiologic outcome compared with placebo and was well tolerated. The results of this study should be confirmed in further long-term trials in larger populations.

http://dx.doi.org/10.2165/00148581-200709001-00003

See also

Paediatr Drugs. 2007;9 Suppl 1:11-20.

Keywords

Adolescent; Adult; Anti-Bacterial Agents; Bacterial Infections; Child; Infection; Inhalation OR nebulised; nebuliser; non pharmacological intervention - devices OR physiotherapy; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Colonization; Aminoglycosides;