primary studies - published RCT

Long-term efficacy and safety of aerosolized tobramycin 300 mg/4 ml in cystic fibrosis.

Code: PM24464974 **Year:** 2014 **Date:** 2014 **Author:** Mazurek H

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

Randomized open-label trial

Participants

CF patients aged >/=6 years having baseline 1 sec forced expiratory volume (FEV(1)) 40-80% predicted.

Interventions

Patients were initially randomized in an 8-week open-label trial (core phase) to compare TNS4 (N = 159) and tobramycin 300 mg/5 ml (TNS5, TOBI((R))) (N = 165). A subset of patients continued in a 48-week, single-arm extension receiving TNS4 only.

Outcome measures

The primary endpoint of the core phase was to demonstrate the non-inferiority of TNS4 compared to TNS5 in terms of absolute change from baseline to week 4 in FEV(1) % predicted. The assessment of long-term safety was the primary purpose of the extension phase. Throughout all phases of the study, microbiological assessments, adverse events, and audiometry findings were also evaluated.

Main results

In the core phase (N = 321), FEV(1) (% predicted) increased from baseline (absolute change) following a single on-treatment cycle for both TNS4 (7.0%) and TNS5 (7.5%) and the non-inferiority between treatments was met [difference between treatments of -0.5 (95% CI: -2.6; 1.6)]. These improvements were maintained throughout the extension phase (N = 209), ranging throughout the study between 5.1% (95% CI: 3.2; 6.9) and 8.1% (95% CI: 6.8; 9.4) compared to baseline. Pa sputum count reductions ranged between 0.6 (95% CI: 0.2; 0.9) to 2.3 (95% CI: 2.0; 2.6) log10 CFU/g throughout the 56 weeks. No remarkable safety issues were identified throughout both study phases, with similar percentages of patients reporting adverse events in the two treatment groups during the 8-week core phase [TNS4 (31.4%); TNS5 (28.0%)].

Authors' conclusions

Overall, TNS4 demonstrated short-term clinical benefits similar to TNS5 which were maintained during the long-term use of TNS4 and was also associated with a favorable tolerability profile.

http://dx.doi.org/10.1002/ppul.22989

See also

Pediatr Pulmonol. 2014 Nov;49(11):1076-89. doi: 10.1002/ppul.22989. Epub 2014 Jan 24.

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; Aminoglycosides;