

primary studies - published RCT

Tobramycin once- vs thrice-daily for elective intravenous antipseudomonal therapy in pediatric cystic fibrosis patients.

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

randomized crossover study

Participants

30 patients (20 females, mean age 11.2 years, mean age range 1.7-18.1 years)

Interventions

patients received elective 14-day courses of treatments A or B, followed by the alternative treatment after a mean interval of 37 (+/- 21) weeks.

Outcome measures

The primary end-point (after 14 and 35 days) was a decrease in the leukocyte count, and the secondary end-points were clinical and lung function parameters, Pseudomonas quantification in sputum, and inflammation markers (immunoglobulin G, C-reactive protein) in serum.

Main results

With the exception of PA density, there were no significant differences between both treatment strategies after 14 days of treatment. After 35 days of treatment, there were no significant changes in the leukocyte count and inflammation markers. Both treatment strategies reduced the bacterial load in the airways, as reflected by a decreased PA density in sputum. Nephrotoxicity was equal in both groups, with a transient slight elevation of urinary N-acetyl-beta-glucosaminidase concentrations. Standard audiometry tests revealed no evidence of a hearing impairment in any patient following therapy. Mean body weight increased during the study period by 0.5 kg. Forced expiratory volume increased by approximately 5% of the predicted volume, forced vital capacity increased by 2% of predicted capacity, and forced mid expiratory flow rate increased by 7% (A) or 4% (B) of the predicted normal value, although these changes were not statistically significant.

Authors' conclusions

Tobramycin given in a daily single dose (with the advantage of being more practical in a home environment) has an efficacy equal to that of three daily doses in terms of elective antipseudomonal therapy in clinically stable patients with CF.

<http://dx.doi.org/10.1007/s15010-009-8117-4>

See also

Infection. 2009 Oct;37(5):424-31. Epub 2009 Sep 5.

Keywords

Adolescent; Anti-Bacterial Agents; Bacterial Infections; Child; Infant; Infection; Intravenous; pharmacological_intervention; Pneumonia; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Aminoglycosides;