primary studies - published RCT

Continuous vs thrice-daily ceftazidime for elective intravenous antipseudomonal therapy in cystic fibrosis

Code: PM19756419 **Year:** 2009 **Date:** 2009 **Author:** Riethmueller, J.

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

Randomized crossover study

Participants

Patients with cystic fibrosis chronic Pseudomonus aeruginosa (PA) infection. All patients received antibiotics electively as 14-day courses on a regular basis, not for acute exacerbations.

Interventions

Continuous 24-h infusion of 100 mg/kg per day ceftazidime (treatment C) in comparison to the usual application of 200 mg/kg per day ceftazidime in three doses (treatment T). Tobramycin administered once daily (10 mg/kg per day) was administered concomitantly in both groups.

Outcome measures

The primary end-point was a decrease in the leukocyte count, and the secondary endpoints were clinical and lung function parameters, Pseudomonas quantification in sputum, and inflammation markers (immunogloblulin [Ig] G, C-reactive protein [CRP]) in serum.

Main results

Fifty-six patients (29 females, mean patient age 14.4 years, age range 5-37) initially received treatments C or T, followed by the alternative treatment after amean interval of 37 ((plus or minus) 21) weeks. After 2 weeks of antibiotic treatment, the overall study group showed significant improvements compared to baseline for body weight, leukocyte counts, CRP, forced expiratory volume in 1 s (FEV1), FVC (forced vital capacity), and bacterial load in the airways, with no significant differences between treatment groups. Both regimens were well tolerated. Threeweeks after cessation of antimicrobial therapy, leukocytes and PA density had returned to pre-treatment values.

Authors' conclusions

Continuous or thrice-daily dosing of intravenous ceftazidime, both combined with once-daily tobramycin, are equally effective application regimens for elective antipseudomonal therapy in clinically stable patients with CF.

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See also

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Keywords

Anti-Bacterial Agents; Bacterial Infections; Infection; Intravenous; pharmacological_intervention; Pneumonia; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Ceftazidime; Cephalosporins; Drug Administration Schedule; Continuous;