primary studies - published RCT

Comparison of piperacillin alone versus piperacillin plus tobramycin for treatment of respiratory infections in children with cystic fibrosis.

Code: PM3393383 **Year:** 1988 **Date:** 1988 **Author:** McCarty JM

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

TCR Not double blind

Participants

17 participants treated (8 in piperacillin group, 9 in piperacillin plus tobramycin group); 3 participants treated on more than one occasion (2 initially in piperacillin group and several months later randomised to other group

Interventions

Piperacillin 600 mg/kg/day vs piperacillin plus tobramycin 8 to 10 mg/kg/day, minimum duration 10 days.

Outcome measures

Lung function, weight, symptom scores, adverse events, bacteriology.

Main results

No differences between P and PT groups were noted in clinical assessment, as judged by Shwachman scores, pulmonary function testing, or weight gain. However, during the course of treatment, quantitative sputum cultures decreased by greater than 10(2) colony-forming units in only 5 out of 19 Pseudomonas isolates from the P group, compared with 12 of 19 isolates from the PT group (P less than 0.03, Chi-square). Although emergence of resistance was not seen, one isolate had an increase in minimum inhibitory concentration from 8 to 128 micrograms/ml. There were no serious adverse reactions to piperacillin; only one patient developed fever possibly related to piperacillin. Therapy with high-dose piperacillin was safe in children with CF. Treatment with piperacillin alone was less effective than combination therapy with gentamicin for reduction in titer of Pseudomonas in sputum. However, the role of antimicrobial agents in the treatment of CF remains undefined.

Authors' conclusions

A double-blind placebo-controlled trial is indicated.

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See also

Pediatr Pulmonol. 1988;4(4):201-4.

Keywords

Anti-Bacterial Agents; Bacterial Infections; Child; Combined Modality Therapy; Infant; Infection; pharmacological_intervention; Piperacillin; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Exacerbation; Penicillins; Aminoglycosides;