primary studies - published RCT

Randomized trial of biofilm testing to select antibiotics for cystic fibrosis airway infection.

Code: PM20963843 **Year:** 2011 **Date:** 2011 **Author:** Moskowitz SM

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

multicenter randomized pilot trial

Participants

chronic airway infections in clinically stable adolescent and adult CF patients. 39 participants

Interventions

participants were randomized to biofilm or conventional treatment groups; 14-day courses of two antibiotics were selected according to an activity-based algorithm using the corresponding susceptibility results.

Outcome measures

colony forming units per gram of sputum and mean increases in forced expiratory volume in 1 sec

Main results

Of the agents tested, meropenem was most active against biofilm-grown bacteria, and was included in regimens for about half of each study group. For 19 of 39 randomized participants, randomization to the other study group would not have changed the antibiotic classes of the assigned regimen. Study groups were comparable at baseline, and had similar mean decreases in bacterial density, measured in log(10) colony forming units per gram of sputum (biofilm, -2.94 [SD 2.83] vs. conventional, -3.27 [SD 3.09]), and mean increases in forced expiratory volume in 1 sec, measured in liters (0.18 [SD 0.20] vs. 0.12 [SD 0.22]).

Authors' conclusions

In this pilot study, antibiotic regimens based on biofilm testing did not differ significantly from regimens based on conventional testing in terms of microbiological and clinical responses. The predictive value of biofilm testing may nonetheless warrant evaluation in an adequately powered clinical trial in younger CF patients or those experiencing acute pulmonary exacerbation.

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See also

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Keywords

Adult; Anti-Bacterial Agents; Bacterial Infections; Combined Modality Therapy; Infection; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Thienamycin; Carbapenems;