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Effectiveness and safety of macrolides in cystic fibrosis patients: a meta-analysis and systematic review

Code: DARE-12011002907 **Year:** 2011 **Date:** 2008 - updated: 07 APR 2020 **Author:** Cai Y

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

Randomised and quasi-randomised controlled trials of antibiotic therapy based on conventional antimicrobial susceptibility testing compared to antibiotic therapy based on combination antimicrobial susceptibility testing in the treatment of acute pulmonary exacerbations in CF due to chronic infection with P. aeruginosa.

List of included studies (1)

Aaron 2005

Participants

Adults and children (with all levels of disease severity) diagnosed with CF, confirmed with sweat test or genetic testing or both with an acute pulmonary exacerbation due to P. aeruginosa.

Interventions

Combination antimicrobial susceptibility testing

Outcome measures

Primary outcomes 1. Lung function (FEV1, FVC) 2. Time to next pulmonary exacerbation

Main results

The search identified one multicentre study eligible for inclusion in the review. This study prospectively assessed whether the use of multiple combination bactericidal antibiotic testing improved clinical outcomes in participants with acute pulmonary exacerbations of cystic fibrosis who were infected with multiresistant bacteria. A total of 132 participants were randomised in the study. The study investigators provided data specific to the 82 participants who were only infected with Pseudomonas aeruginosa for their primary outcome of time until next pulmonary exacerbation. For participants specifically infected with only Pseudomonas aeruginosa, the hazard ratio of a subsequent exacerbation was 0.82, favouring the control group (95% confidence interval 0.44 to 1.51) (P = 0.52). No further data for any of this review's outcomes specific to participants infected with Pseudomonas aeruginosa were available. The risk of bias for the included study was deemed to be low. The quality of the evidence was moderate for the only outcome providing data solely for individuals with infection due to Pseudomonas aeruginosa. For other outcomes, we were unable to judge the quality of the evidence as no data were available for the relevant subset of participants.

Authors' conclusions

The current evidence, limited to one study, shows that there is insufficient evidence to determine effect of choosing antibiotics based on combination antimicrobial susceptibility testing compared to choosing antibiotics based on conventional antimicrobial susceptibility testing in the treatment of acute pulmonary exacerbations in people with cystic fibrosis with chronic Pseudomonas aeruginosa infection. A large international and multicentre study is needed to further investigate this issue. The only study included in the review was published in 2005, and we have not identified any further relevant studies up to March 2017. We therefore do not plan to update this review until new studies are published.

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See also

Database of Abstracts of Reviews of Effects YR: 2011 NO: 2 PG: 968-978

Keywords

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