*Cochrane Database of Systematic Reviews - - Cochrane Review*

# Oral anti-pseudomonal antibiotics for cystic fibrosis

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

Randomised or quasi-randomised controlled trials comparing any dose of oral anti-pseudomonal antibiotics, to other combinations of inhaled, oral or intravenous antibiotics, or to placebo or usual treatment for pulmonary exacerbations and long-term treatment.

## List of included studies (5)

Hodson 1987; Richard 1997; Schaad 1997; Sheldon 1993; Wang 1988

## Participants

Adults and children (with all levels of disease severity) diagnosed with CF clinically and confirmed with sweat test or genetic testing or both. Participants to have chronic infection with P. aeruginosa.We arbitrarily selected the UK Cystic Fibrosis Trustâ€™s definition of chronic infection, i.e. the culture of P. aeruginosa on two ormore occasions over a six-month period prior to the start of the trial (CF Trust 2004). A post hoc change to the review was made and we included trials in which participants were described as chronically infected, even if no further details were given.

## Interventions

Long-term treatment - oral antibiotics; Pulmonary exacerbation - oral antibiotics

## Outcome measures

Adverse events; FEV1 ml (mean change); Frequency of need for additional antibiotic use; FVC ml (mean change); Isolation of antibiotic-resistant strains - P. aeruginosa; Isolation of antibiotic-resistant strains - S. aureus; Mean FEV1 at end of course (L); Mean FVC at end of course (L); Mortality; Participants needing additional IV courses; Weight (kg)

## Main results

We included three trials examining pulmonary exacerbations (171 participants) and two trials examining long-term therapy (85 participants). We regarded the most important outcomes as quality of life and lung function. The analysis did not identify any statistically significant difference between oral anti-pseudomonal antibiotics and other treatments for these outcome measures for either pulmonary exacerbations or long-term treatment. One of the included trials reported significantly better lung function when treating a pulmonary exacerbation with ciprofloxacin when compared with intravenous treatment; however, our analysis did not confirm this finding. We found no evidence of difference between oral anti-pseudomonal antibiotics and other treatments regarding adverse events or development of antibiotic resistance, but trials were not adequately powered to detect this. None of the studies had a low risk of bias from blinding which may have an impact particularly on subjective outcomes such as quality of life. The risk of bias for other criteria could not be clearly stated across the studies.

## Authors' conclusions

We found no conclusive evidence that an oral anti-pseudomonal antibiotic regimen is more or less effective than an alternative treatment for either pulmonary exacerbations or long-term treatment of chronic infection with P. aeruginosa. Until results of adequately-powered future trials are available, treatment needs to be selected on a pragmatic basis, based upon any available non-randomised evidence, the clinical circumstances of the individual, the known effectiveness of drugs against local strains and upon individual preference.

http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD005405.pub4/abstract

## See also

Remmington T, Jahnke N, Harkensee C. Oral anti-pseudomonal antibiotics for cystic fibrosis. Cochrane Database of Systematic Reviews 2016, Issue 7. Art. No.: CD005405. DOI: 10.1002/14651858.CD005405.pub4.

## Keywords

Adult; Anti-Bacterial Agents; Bacterial Infections; Child; Infection; Oral; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Colonization; Exacerbation;