Other Reviews - - Other Review

Inhaled antibiotics for the treatment of chronic bronchopulmonary Pseudomonas aeruginosa infection in cystic fibrosis: systematic review of randomised controlled trials

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

systematic review

Participants

CF patients with Pseudomonas aeruginosa chronic lung infection

Interventions

The three currently available inhaled antibiotics (aztreonam lysine (AZLI), colistin (COL) and tobramycin (TOB)).

Outcome measures

FEV1 and mean sputum P. aeruginosa density

Main results

The three AZLI placebo-controlled studies showed that the improvements in FEV1 and mean sputum P. aeruginosa density were statistically significant better than with placebo. The two COL placebo-controlled studies involved few patients but showed that COL was better than placebo in terms of maintenance of some pulmonary function parameters. The tobramycin inhalation solution (TIS) and tobramycin inhalation powder studies showed that the efficacy of both formulations was similar but significantly better than placebo. In the comparative studies, TIS showed more efficacy than COL solution, colistin inhalation powder showed non-inferiority to TIS and AZLI was superior to TIS.

Authors' conclusions

Placebo-controlled and comparative clinical trials have shown that clinical evidence of inhaled antibiotics is very different. The choice of treatment for each individual CF patient must be based on the features of the drug (clinical evidence on efficacy and safety), the inhalation system and the patient characteristics. Development of new inhaled antibiotics will allow new end points of efficacy and therapy regimens to be assessed.

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See also

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Keywords

Anti-Bacterial Agents; Bacterial Infections; Infection; Inhalation OR nebulised; Oral; pharmacological_intervention; Pseudomonas aeruginosa; Pseudomonas; Respiratory Tract Diseases; Respiratory Tract Infections; Tobramycin; Colistin; Aminoglycosides; other anti-bacterial agents; Aztreonam; Monobactams;