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The effectiveness of self-care support interventions for children and young people with long-term conditions: a systematic review

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

Randomised controlled trials (RCTs) comparing a single intravenous antibiotic with a combination of that antibiotic plus a second antibiotic in people with CF.

List of included studies (8)

Costantini 1982; Huang 1982; Master 1997; McCarty 1988; McLaughlin 1983; Parry 1977; Pedersen 1986; Smith 1999

Participants

Children and adults with defined CF diagnosed clinically and by sweat or genetic testing including all ages and all degrees of severity.

Interventions

Single (aminoglycosides or beta lactams) intravenous antibiotic therapy regimen

Outcome measures

Mean change *Pseudomonas* density in cfu/g at end of course; Mean FEV1 at end of course (% pred); Mean FVC at end of course (% pred); Mean MMEF at end of course (% pred); Mean PFR at end of course (% pred); Mean RV at end of course (% pred); Mean RV/TLC at end of course (% pred); Mean Schwachman score at end of course; Mean time to next course of antibiotics (weeks); Mean TLC at end of course (% pred); Mean WBC count at end of course; Number adverse events; Number of *Pseudomonas* isolates eradicated at end of course; Number readmitted; Number resistant strains

Main results

We identified 59 trials, of which we included eight trials (356 participants) comparing a single anti-*pseudomonal* agent to a combination of the same antibiotic and one other. There was a wide variation in the individual antibiotics used in each trial. In total, the trials included seven comparisons of a beta-lactam antibiotic (penicillin-related or third generation cephalosporin) with a beta-lactam-aminoglycoside combination and three comparisons of an aminoglycoside with a beta-lactam-aminoglycoside combination. There was considerable heterogeneity amongst these trials, leading to difficulties in performing the review and interpreting the results. These results should be interpreted cautiously. Six of the included trials were published between 1977 and 1988; these were single-centre trials with flaws in the randomisation process and small sample size. Overall, the methodological quality was poor and the certainty of the evidence ranged from low to moderate. The review did not find any differences between monotherapy and combination therapy in either the short term or in the long term for the outcomes of different lung function measures, bacteriological outcome measures, need for additional treatment, adverse effects, quality of life or symptom scores.

Authors' conclusions

The results of this review are inconclusive. The review raises important methodological issues. There is a need for an RCT which needs to be well-designed in terms of adequate randomisation allocation, blinding, power and long-term follow-up. Results need to be standardised to a consistent method of reporting, in order to validate the pooling of results from multiple trials.

http://onlinelibrary.wiley.com/doi/10.1111/j.1365-2214.2012.01395.x/abstract?jsessionid=AB1D6F1C93E5A25F2E575F2E9177D50E_f01t01

See also

Child Care Health Dev. 2013 May;39(3):305-24. doi: 10.1111/j.1365-2214.2012.01395.x. Epub 2012 Jun 8.

Keywords

Aminoglycosides; Anti-Bacterial Agents; Bacterial Infections; Cephalosporins; Combined Modality Therapy; Infection; Intravenous; pharmacological_intervention; Respiratory Tract Diseases; Respiratory Tract Infections;