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[Impact of physical exercise in cystic fibrosis patients: A systematic review].

Code: PM27209116 **Year:** 2016 **Date:** 2019 - updated 12 APR 2021 **Author:** Le Gal C

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

Randomised controlled trials (including crossâ€•over trials)

List of included studies (1)

Tullis 2014

Participants

Adults and children with CF (confirmed by either a positive sweat test or the identification of two pathogenic CFTR mutations) and chronic BCC infection (defined as a positive respiratory culture growth of BCC within the last six months and BCC growth in more than 50% of all respiratory cultures in the last 12 months)

Interventions

Longâ€•term (defined as a period of eight weeks or more) antibiotics (all agents, doses and regimens) via either the inhaled or oral route. Trials will be included if there is comparison against no treatment, placebo, another antibiotic agent, another mode of delivery, or another dose or regimen of the same antibiotic.

Outcome measures

Primary outcomes Lung function Forced expiratory volume in one second (FEV1) Absolute change in volumes, % predicted or both Relative change in volumes, % predicted or both Pulmonary exacerbations Time to next exacerbation Hospitalisations Exacerbation rate IV antibiotic use Adverse events Proportion of participants who had to withdraw or change therapy mild: transient event, no treatment change, e.g. rash, nausea, diarrhoea moderate: treatment discontinued, e.g. nephrotoxicity, ototoxicity, hepatitis, visual impairment severe: causing hospitalisation or death Secondary outcomes Mortality Quality of life (QoL) Validated QoL score (e.g. CFQâ€•R, CRISS score) BCC culture Sputum density of BCC Changes in inflammatory markers Sputum or bronchoalveolar lavage (BAL) samples Serum or blood

Main results

We included one RCT (100 participants) which lasted 52 weeks comparing continuous inhaled aztreonam lysine (AZLI) and placebo in a doubleâ€•blind RCT for 24 weeks, followed by a 24â€•week openâ€•label extension and a fourâ€•week followâ€•up period. The average participant age was 26.3 years, 61% were male and average lung function was 56.5% predicted. Treatment with AZLI for 24 weeks was not associated with improvement in forced expiratory volume in one second (FEV1), mean difference 0.91% (95% confidence interval (CI) â€•3.15 to 4.97) (moderateâ€•quality evidence). The median time to the next exacerbation was 75 days in the AZLI group compared to 51 days in the placebo group, but the difference was not significant (P = 0.27) (moderateâ€•quality evidence). Similarly, the number of participants hospitalised for respiratory exacerbations showed no difference between groups, risk ratio (RR) 0.88 (95% CI 0.53 to 1.45) (moderateâ€•quality evidence). Overall adverse events were similar between groups, RR 1.08 (95% CI 0.98 to 1.19) (moderateâ€•quality evidence). There were no significant differences between treatment groups in relation to mortality (moderateâ€•quality evidence), quality of life or sputum density. In relation to methodological quality, the overall risk of bias in the study was assessed to be unclear to low risk.

Authors' conclusions

We found insufficient evidence from the literature to determine an effective strategy for antibiotic therapy for treating chronic BCC infection.

http://dx.doi.org/10.1016/j.rmr.2015.08.006

See also

Rev Mal Respir. 2016 Sep;33(7):573-82. doi: 10.1016/j.rmr.2015.08.006. Epub 2016 May 18.

Keywords

Anti-Bacterial Agents; pharmacological_intervention; Burkholderia cepacia; Respiratory Tract Infections; Respiratory Tract Diseases; Infection; Bacterial Infections; Exacerbation;