HTA - - Health Technology Assessment Report

Hypertonic saline nebules for patients with cystic fibrosis and bronchioectasis: a review of the clinical and cost-effectiveness

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

Systematic review

List of included studies (3)

Wark 2005; Elkins 2006; Kellett 2005

Participants

Cf patients. One systematic review and two randomized controlled trials were identified.

Interventions

Hypertonic saline nebules

Outcome measures

Mucociliary clearance; lung function; tolerability; number of exacerbations, antibiotic use for exacerbations, absenteeism from school or work; ability to engage in usual activities; cost-effectiveness

Main results

A systematic review concluded that HS improves mucociliary clearance in short-term clinical trials and appears to increase lung function compared to placebo. It also concluded that HS may be less effective than rhDNase at improving lung function after three months, and is equally efficacious and well tolerated compared to mannitol in improving bronchial mucus clearance in patients with CF. A further RCT identified compared HS to placebo (IS; 0.9% saline) for approximately one year and found a moderate yet sustained improvement in the level of lung function for CF patients. It also found significant reductions in the number of exacerbations, antibiotic use for exacerbations, absenteeism from school or work, and increased ability to engage in other usual activities with the use of HS. Another RCT identified compared rhDNase and HS for children with CF, and found HS was not as effective as daily rhDNase, although there was some variation in individual response. A cost-effectiveness study in a UK context concluded that both alternate-day rhDNase and daily rhDNase are cost- effective relative to HS. However, there was no comparison to placebo in this economic evaluation. With regard to the treatment of BE with HS, the one included trial identified in the review found HS to be to be a safe, effective, and easily adm inistered adjunct to physiotherapy in select patients (i.e. patients with low sputum volume). However, further generalizability of these results will depend on larger, long term trials in a wider BE patient group. The authors are unable to make any statements about the cost-effectiveness of HS for BE due to the absence of cost-effectiveness studies in this area. Overall, and subject to the limitations of the studies, the evidence suggests that for CF treatment, HS is more effective than placebo, with significantly fewer exacerbations. However, the cost-effectiveness of HS versus placebo for CF has not been studied. The limited information for use of HS in patients with BE should be considered when deciding about the use of HS in this patient population.

http://www.cadth.ca/media/pdf/htis/L0077%20Hypertonic%20Saline%20final.pdf

See also

Ottawa: Canadian Agency for Drugs and Technologies in Health (CADTH)

Keywords

Bronchiectasis; hydration; Hypertonic Solutions; Inhalation OR nebulised; pharmacological_intervention; Respiratory System Agents; Respiratory Tract Diseases;