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LUNG ALERT

Inhaled hypertonic saline reduces pulmonary exacerbations in cystic fibrosis

▲ Elkins MR, Robinson M, Rose BR, et al. A controlled trial of long-term inhaled hypertonic saline in patients with cystic fibrosis. *N Engl J Med* 2006;**354**:229–40

Short term administration of hypertonic saline has been shown to improve lung function in cystic fibrosis. The authors conducted a double blind, parallel group trial over a 48 week period with 164 patients aged at least 6 years randomly assigned to either 7% (hypertonic) or 0.9% saline (control). A bronchodilator was administered before each inhalation of the study solution.

There was no significant difference between the two groups in the primary outcome measure—the rate of change in lung function. However, in the hypertonic saline group the absolute level of lung function, averaged over the period from 4 to 48 weeks after randomisation, was moderately higher than in the control group ($p = 0.03$): FEV₁ 3.2% (95% CI 0.1 to 6.2) higher; FVC 2.8% (95% CI 0.4 to 5.2) higher.

There were fewer pulmonary exacerbations (defined by signs and symptoms) in the hypertonic saline group than in the control group, with 2.74 exacerbations per participant in the control group and 1.32 in the hypertonic saline group (difference 1.42, 95% CI 0.86 to 1.99, $p < 0.001$). Furthermore, 41% of the hypertonic saline group were exacerbation-free over 48 weeks compared with 16% of the control group ($p < 0.001$). However, these differences were largely confined to the first 3 months of treatment and were paralleled by a decrease in compliance in patients over time.

This study suggests that hypertonic saline (preceded by a bronchodilator) may have potential as a long term intervention for cystic fibrosis.

A J Mackay

Senior House Officer, Royal Free Hospital, London, UK; malexmackay@hotmail.com