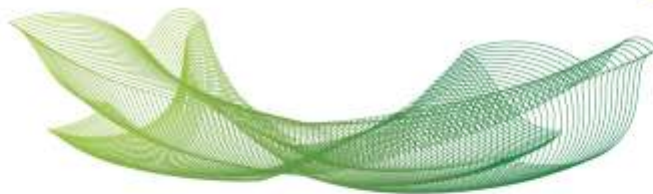


Tipo	Periódico
Título	Safety, tolerability and effects of sodium bicarbonate inhalation in cystic fibrosis
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Assunto (palavras chaves)	Aerossol; pH; HCO <sub>3</sub> <sup>-</sup> ; CFTR; rheology; mucus; viscosity; elasticity; viscoelasticity
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Resumo	<p>Background: Among the many consequences of loss of CFTR protein function, a significant reduction of the secretion of bicarbonate (HCO<sub>3</sub><sup>-</sup>) in cystic fibrosis (CF) is a major pathogenic feature. Loss of HCO<sub>3</sub><sup>-</sup> leads to abnormally low pH and impaired mucus clearance in airways and other exocrine organs, which suggests that NaHCO<sub>3</sub> inhalation may be a low-cost, easily accessible therapy for CF.</p> <p>Objective: To evaluate the safety, tolerability, and effects of inhaled aerosols of NaHCO<sub>3</sub> solutions (4.2% and 8.4%).</p> <p>Methods: An experimental, prospective, open-label, pilot, clinical study was conducted with 12 CF volunteer participants over 18 years of age with bronchiectasis and pulmonary functions classified as mildly to severely depressed. Sputum rheology, pH, and microbiology were examined as well as spirometry, exercise performance, quality-of-life assessments, dyspnea, blood count, and venous blood gas levels.</p> <p>Results: Sputum pH increased immediately after inhalation of NaHCO<sub>3</sub> at each clinical visit and was inversely correlated with rheology when all parameters were evaluated: [G' (elasticity of the mucus)=- 0.241; G'' (viscosity of the mucus)=- 0.287; G* (viscoelasticity of the mucus)=- 0.275]. G* and G' were slightly correlated with peak flow, forced expiratory volume in 1 s (FEV1), and quality of life; G'' was correlated with quality of life; sputum pH was correlated with oxygen consumption (VO<sub>2</sub>) and vitality score in quality of</p>



	<p>life. No changes were observed in blood count, venous blood gas, respiratory rate, heart rate, peripheral oxygen saturation of hemoglobin (SpO<sub>2</sub>), body temperature, or incidence of dyspnea. No adverse events associated with the study were observed.</p> <p>Conclusion: Nebulized NaHCO<sub>3</sub> inhalation appears to be a safe and well tolerated potential therapeutic agent in the management of CF. Nebulized NaHCO<sub>3</sub> inhalation temporarily elevates airway liquid pH and reduces sputum viscosity and viscoelasticity.</p>
Fomento	