Online supplement 1: Content of supervised cycles using the Acapella®

The content of the 10 supervised cycles was standardised in accordance with the Acapella® guidelines from the Association of Chartered Physiotherapists in Cystic Fibrosis organisation. Each of the 10 cycles consisted of 10 breaths with Acapella® with a breath hold for 2-3 seconds, removing the acapella® to perform 2-3 forced expiration technique and cough, and returning to the Acapella®, lasting approximately 20 minutes. Resistance was set as appropriate to the patient (allowing an exhalation of 3-4 seconds). A manometer was used with the Acapella® and the average pressure (Hz) during the treatment was recorded. Acapella® (Acapella® duet Vibratory PEP Therapy System) was chosen as the method of airways clearance as it was an easily administered adjunct, delivering both positive pressure and oscillations to the airways. This model of the Acapella® had a port which allowed for a portex updraft nebuliser to be attached and nebulised medication to be delivered simultaneously. The port could be closed off and the Acapella® used without the nebuliser. The patient was instructed on its use by a qualified physiotherapist at screening and was supervised for correct use during each treatment session.