



Atelectatic children treated with intrapulmonary percussive ventilation via a face mask: Clinical trial and literature overview.

Yen Ha TK, Bui TD, Tran AT, Badin P, Toussaint M, Nguyen AT.

Department of Physiotherapy, Paediatric Hospital No. 1, Ho Chi Minh City, VIETNAM

BACKGROUND: Persistent atelectasis in children is lacking a gold standard treatment. Intrapulmonary percussive ventilation (IPV) is presented as a promising chest physiotherapy technique in the treatment of atelectasis. This study aimed to follow the evolution of atelectasis resolution with noninvasive IPV in young children and to detect eventual adverse effects.

METHODS: Six children were hospitalized for respiratory distress with suspicion of atelectasis. A 15 min IPV treatment was immediately started at D1 twice a day for 5 days. Children were free of any other treatment. Chest X-Ray (CXR) was performed on the second day (D2) and was repeated 3 days later (D5). After the study, CXR were retrospectively reviewed by three specialists who had no knowledge of the clinical observations of the patients. They were asked to assess atelectasis by a score between 4 (complete collapse) and 0 (complete resolution). A clinical score on a maximum of 4 points was assessed by appetite deterioration, dyspnoea, mucus production and cough presence at D1 and D5 (1 point per symptom present). Paired t-test compared D1 and D5 results.

RESULTS: All patients returned home after 5 days IPV. SpO₂ normalized (93.2 +/- 0.8 to 95.3 +/- 0.8; P = 0.002) and patients all improved clinically (score, 2.8 +/- 0.9 to 0.8 +/- 0.6; P < 0.05). Out of four patients with radiographic evidence of atelectasis, three improved their atelectasis score.

CONCLUSIONS: No side-effect or adverse effect was observed during IPV treatments. IPV was safe and effective in atelectasis resolution in 3/4 of the cases. Patients all recovered a stable clinical state. CXR improved in 4/5 children. They were all discharged home after 5 days of IPV treatment.

PMID: 17587276 [PubMed - in process]

Pediatr Int - 2007 Aug; 49(4):502-7.



**PERCUSSIONAIRE®
CORPORATION**

130 McChee Road, Suite 109, Sandpoint ID 83864

percussionaire.com

208.263.2549