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CHRONIC OBSTRUCTIVE LUNG DISORDERS IN CHILDREN: BENEFITS OF HIGH FREQUENCY CHEST WALL OSCILLATION

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Background and aims: High frequency chest wall oscillation (HFCWO) is one of methods of chest physiotherapy, which assist patients in the mobilization of retained airway secretion. The aim of study was to compare the short-term effects of HFCWO applied by "The Vest® Airway Clearance System" (Hill-Rom Services Inc., USA), with standard airways clearance techniques in hospitalized patients with obstructive lung disorders (OLD).

Methods: A 10-days comparative study in 2 groups was conducted. Patients admitted to hospital who met the inclusion criteria were enrolled. The inclusion criteria were: exacerbation of chronic bronchitis, multiple bronchiectasis, cystic fibrosis or primary ciliary dyskinesia; age $\geq$ 2 years; ability to give informed consent. Exclusion criteria were: presence of haemoptysis; pneumotorax; bronchospasm; chest pain and heart failure. Clinical assessments were performed. Spirometry was done in patients older 5 years. Efficacy and comfort of therapy were assessed by completing a questionnaire.

Results: Totally 30 patients from 2 till 18 years were examined (mean age 11,4 ±1,6 years), equally divided on two groups. 1st group received HFCWO, 2nd - routine airways clearance techniques two times per day. The change of mean ΔFEV1 predicted between groups was statistically significant (13,8 % vs 10,2 %, $p< 0,05$). Results of questionnaire score were higher in the 1st group: efficacy domain - 4,3 vs 3,7, comfort domain - 4,7 vs 2,3 . No side effects were registered.

Conclusions: HFCWO allows efficiently clear airways and improves respiratory function in patients with exacerbation of OLD. The method is well tolerable and safe.