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Title: The effects of inspiratory muscle training on respiratory muscle strength and pulmonary functions in children with bronchiectasis

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Body: Aim: The aim of this study was to examine the effects of inspiratory muscle training on respiratory muscle strength and pulmonary functions in children with bronchiectasis Methods: A randomized, double-blind, prospective study was carried out by comparing two groups of children with stable bronchiectasis. Group A was trained with inspiratory-threshold loading device and cough training. Group B received a single cough teaching session. 16 children were in Group A (mean age:11,81±2,71 years) and 15 children were in Group B (mean age:12,07 ±2,25 years). Patients in Group A trained at inspiratory-threshold loads up to 40% of maximal static inspiratory pressure (PImax) and patients in Group B did not participate in any form of training. Pulmonary functions (VC, FRC, FEV1, PEF, MEF%50, MVV, MMF) and respiratory muscle strength measurements (PImax and PEmax) were performed at the beginning and at the end of the study. For statistical analyses; independent sample t-test, Mann Whitney U test, Wilcoxon Signed-rank test and paired t-test were used. Results: Demographic findings were similar (p>0, 05) in two groups. There were significant improvements in pulmonary functions and respiratory muscle strength measurements (p≤0, 05) in Group A patients, while no significant difference was seen in Group B patients after eight weeks. Conclusion: From these results, we concluded that inspiratory muscle training improves respiratory muscle strength and pulmonary functions in children with bronchiectasis. It is also observed that cough training helped children to expectorate easily. Funding: Istanbul University Research Foundation.