Chest Physical Therapy and Outcomes in Primary Spontaneous Pneumothorax: A Systematic Review

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Abstract

Objective: An intercostal chest drainage (ICD) is a treatment in large or symptomatic primary spontaneous pneumothorax (PSP). Chest physical therapy strategies may be beneficial in patients with PSP in terms of reducing ICD duration. The present study aimed to evaluate if any physical therapy strategies provided good outcomes in patients with PSP.

Materials and Methods: The present study was a systematic review. The inclusion criteria were articles published in literature databases conducted in children or adults, had at least one arm of physical therapy strategies, and had the outcomes of either duration of ICD treatment or admission duration. The authors searched five databases in this review. The final search was performed on April 28, 2021. For both outcomes of the present study, mean differences between experimental and control group were calculated and reported with their 95% confidence interval (CI).

Results: There were 1,153 articles from five databases after duplication removal. In total, there were 264 articles eligible for full-text article review. Of those, only one article met the study criteria published by Kim and Park in 2012. The study was conducted in 40 patients with pneumothorax compared systematic breathing exercise program or experimental group and control group. The experimental group had significantly better two outcomes than the control group with mean differences of duration of ICD treatment and admission duration were -2.05 (95% CI: -3.26 to -0.84) and -1.85 (95% CI: -3.08 to -0.62).

Conclusion: Chest physical therapy may shorten duration of ICD treatment and reduce length of hospital stay in patients with PSP.

Keywords: Deep breathing exercise; Incentive spirometry; Range of motion exercise; Walking exercise; Feedback