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Feasibility and Efficacy of Inspiratory Muscle Training in Patients with Head and Neck Cancer receiving Concurrent Chemoradiotherapy

Prina Vira

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Feasibility and Efficacy of Inspiratory Muscle Training in Patients with Head and Neck Cancer receiving Concurrent Chemoradiotherapy

Objectives: Patients with head and neck cancer(HNC) undergoing concurrent chemoradiotherapy (CCRT) often experience pulmonary symptoms. This study evaluated if a 7-week inspiratory muscle training (IMT) program during CCRT is feasible, adherent, and safe in patients with HNC. This study also evaluated the effect of IMT on diaphragm thickness, mobility, and cardiorespiratory parameters in patients with HNC receiving CCRT. **Study design:** Prospective pilot study. **Methods:** Ten participants with advanced stage HNC receiving CCRT were recruited for the study. Feasibility, adherence, and safety of the intervention were the primary outcomes. Changes in diaphragm thickness and mobility, maximal inspiratory pressure, maximal expiratory pressure, forced vital capacity, forced expiratory volume in first second and functional capacity using 6-MWT were measured at baseline and post 7 weeks of CCRT. IMT was performed at one session per day for 5 days a week for 7 weeks. Eight sets of two minutes of inspiratory manoeuvres with one minute rest period between them with intensity of 40% MIP were given. **Results:** 10 participants were included in this study out of the 13 patients screened, indicating the feasibility to be 76.9%. Participants completed a total of 260 training sessions out of the 350 planned sessions denoting the adherence level as 74%. Diaphragm thickness and MEP remained significantly unchanged while significant decline was seen in diaphragm mobility, MIP, FVC, FEV1 and 6-MWD at the end of 7 weeks. No adverse events were reported following the intervention. **Conclusion:** Inspiratory muscle training did not show significant effect on the diaphragm thickness, mobility, and cardiorespiratory parameters; however, it was feasible, adherent, and safe in patients with HNC receiving CCRT