Effect of Persistent Asthma on Musculoskeletal Dysfunction and Pain in Adults


Background: Asthma is a chronic inflammatory disease of the airways that overload the respiratory muscles and may lead to muscles shortening and changes in postural alignment. Chronically, these changes can trigger a vicious cycle that might also cause pain.

Objective: Our study aimed to test the hypothesis that persistent asthma leads to postural misalignment, muscles shortening and chronic pain.

Methods: This cross-sectional study evaluated 30 patients with mild (MPA; N=17) and severe persistent asthma (SPA; N=13) and 15 control subjects (CG). Asthma was classified by GINA and posture alignment and muscles shortening was assessed by head and shoulder alignment, chest wall expansion and posterior muscles flexibility. The measures used during the evaluation were tested for their reproducibility previously. Pain complaints were also assessed.

Results: Our results show that patients with mild and severe persistent asthma presented changes in 64% of measurements compared with CG. Head and (p=0.01) shoulder forward (p=0.01), lower chest wall expansion (p<0.001), decreased shoulders internal rotation (p<0.001) and lower thoracic spine flexibility (p=0.03) were presented by both groups with persistent asthma: MPA and SPA. The reproducibility test show 90% of agreement intra-rater and 60% enter-raters on the measures used for evaluation. Thoracic, cervical or shoulder chronic muscles pain was reported by 47% of the patients with persistent asthma. Subjects from CG didn´t reported any chronic pain.

Conclusion: Our results show that persistent asthmatic patients have postural misalignment, muscles shortening and chronic pain that is not related to disease severity.