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Title: Thoracoabdominal dyssynchrony and it relationship with muscle strength in patients with COPD: Preliminary results

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Body: Background: Upper limbs (UL) exercises can generate thoracoabdominal dyssynchrony (TD), which increase the dyspnea in patients with COPD. However, it is unknown the influence of posture and inspiratory muscle strength (IMS) in TD. Aim: To verify the TD in rest and UL exercises comparing sitting and standing posture and IMS. Methods: Fifteen patients with COPD (FEV_1 47±16%pred, age 66±9, MIP 58±21cmH_2O) performed flexion-extension exercises at the shoulder (1), above the shoulder (2) and horizontal abduction-adduction (3) in sitting and standing postures. The respiratory inductive plethysmography was performed (LifeShirt) and the Borg scale was reported. The PhRIB (Phase Relation during Inspiration), PhREB (during Expiration), PhRTB (Entire Breath) and PhAng (Phase Angle) were analysed (repeated measures test). In addition, patients were divided in two groups (MIP above and below 60%pred) (one-way ANOVA). Results: The TD increased during exercises. There was a significant increase of the variables ($p<0.05$) during exercise situation compared to rest in both studied postures, without differences between them. The group with MIP below 60%pred showed higher dyssynchrony in exercise 1 in sitting, and exercise 3 in standing. There was no difference in dyspnea in both groups. Table 1 summarizes the results.

	PhRiB	PhREB	PhRTB	PhAng
Sitting rest vs sitting	1	1, 2	1, 2	
Standing rest vs standing	1, 2, 3	1, 2, 3	1, 2, 3	3
p-value	0.00	0.00	0.00	0.00

Conclusion: These preliminary results suggest that upper limb exercises cause TD independent of the postures adopted. In additional, the results suggest that the inspiratory muscle weakness seems get worse the dyssynchrony. RB is a fellow of CAPES.