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Title: Thoracoabdominal contribution to tidal volume after an inpatient cardiac rehabilitation program associated to continuous positive airway pressure

Ms. Camila B.F. 27277 Pantoni camilapantoni@gmail.com¹, Mrs. Luciana 27278 Di Thommazo lucianadt@gmail.com¹, Dr. Renata G. 27279 Mendes mendesrg@hotmail.com¹, Mrs. Flávia C.R. 27280 Caruso fla.rossi@hotmail.com¹, Mr. Daniel 27281 Mezzalira daniel.mezzalira@gmail.com¹, Prof. Dr Aparecida M. 27283 Catai mcatai@ufscar.br¹, Mr. Othon 27284 Amaral Neto ctcv@uol.com.br MD² and Prof. Dr Audrey 27301 Borghi-Silva audrey@ufscar.br¹. ¹ Physical Therapy Department, Federal University of São Carlos, Brazil and ² Cardiovascular Department, Santa Casa Araraquara Hospital, Araraquara, Brazil

Body: Background: Continuous positive airway pressure (CPAP) is an important strategy for improvement of gas exchange and breathing working in post operative of coronary artery bypass grafting surgery (CABG). However, it's unknown the breathing pattern (BP) behaviour after inpatient cardiac rehabilitation (CR) program associated to noninvasive ventilation (NIV) during exercises. Aim: To evaluate the BP of post-CABG patients engaged in CR associated to NIV. Methods: Nineteen patients submitted to twice-daily supervised postoperative exercise protocol, which consisted of respiratory exercises and early mobilization (upper and lower limbs exercises and ambulation) with NIV (CPAP= 58,6±8,4yrs) between 9-10 cmH₂O and without (CG= 58±5,7yrs) were evaluated. BP was assessed by respiratory inductive plethysmography (Lifeshirt system) and analysed by inspiratory (ViVol) and expiratory tidal volume (VeVol); inspiratory, expiratory and total time and thoracoabdominal coordination measures (%RCi and %RCe- percent rib cage inspiratory and expiratory contribution to tidal volume ratio, respectively) in rest sitting position at discharge time. Unpaired Student t test was applied for intergroup analysis (p<0,05). Results: CPAP group presented lower values of %RCi (65±24 versus 84±12) and %RCe (64±24 versus 84±12) compared to CG. No others differences were observed. Conclusion: These results suggest that patients engaged in CR associated to CPAP presents reduction of upper rib cage motion, which could be associated to better distribution of ventilation and decrease of breathing cost energy and accessory muscles activity. FAPESP SUPPORT (2009/54194-5).