European Respiratory Society
Annual Congress 2012

Abstract Number: 2234

Publication Number: P3870

Abstract Group: 4.2. Sleep and Control of Breathing

Keyword 1: Sleep disorders **Keyword 2:** Sleep studies **Keyword 3:** Apnoea / Hypopnea

Title: Heart rate variability by sleep stage at different parts of the night in obstructive sleep apnea

Ms. Renata 13207 Trimer retrimer@hotmail.com , Ms. Fernando 13208 Sousa Melo Costa fernandocostafisio@yahoo.com.br , Ms. Renata 13209 Gonçalves Mendes mendesrg@hotmail.com , Ms. Antonio 13210 Delfino delfino@yahoo.com , Ms. Luciana Maria 13211 Malosa Sampaio lucianamalosa@terra.com.br and Prof. Dr Audrey 17363 Borghi-Silva audrey@ufscar.br . [1] Physiotherapy, Federal University of São Carlos, SP, Brazil, 18052-780 .

Body: Obstructive sleep apnea (OSA) is a respiratory disorder characterized by recurrent airflow obstruction caused by total or partial collapse of the upper airway. It is well known that HRV are diminished in patients with OSA. However, the analysis of different parts of the night and of the evolution within sleep stages in OSA patients has not yet been investigated. Objectives: Evaluate and compare HRV in 3 intervals of each sleep stage in overnight polysomnographies in OSA and matched healthy controls. We studied overnight polysomnographies of 6 untreated OSA patients (mean age 50[+-]14 yr, apnea-hypopnea index [AHI]= 9.4 [+-]6 events per/hour) and 6 matched healthy controls. Time and non-linear analysis of R-R intervals (RRi) was performed of the minimum of 3 central 5-minute sample of stage II, III and REM sleep that was free of stage shifts, artifacts, arousals and apneas. Subsequently, we analyzed the average of these stages between OSA and controls. Results: Comparing the 3 parts of each stage, we did not observed any difference intragroup (P>0.05). In addition, we only observed significant difference of RMSSD index between OSA and controls (P<]0.001) in the first REM stage. In contrast, when compared the average of 3 central 5-minute samples, we observed significant differences of mean RRi, RR tri index, TINN (ms), SD1 and SD2 between OSA and controls (P<0.05) in all stages. Conclusion: The preliminary results showed that despite of any change in the HRV evolution through 3 intervals of each stage, the number of samples analyzed during the night may influence the results of HRV in overnight polysomnography.
Financial Support: FAPESP.