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Cardiopulmonary function, inflammation and symbolic analysis of heart rate variability in diabetes

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Diabetes is a complex disease that involves multiple systems. Nowadays our research group is developing studies about cardiopulmonary function, symbolic analysis of heart rate variability (HRV) and their relationship with metabolic variables and inflammation. The reduced capacity to perform submaximal exercise in individuals with diabetes has been demonstrated, but the mechanisms responsible for this alteration still controversial. Recently, our group published a study showing that subjects with DM had decreased cardiorespiratory fitness that was not correlated with C-Reactive Protein levels, HbA1c and pulmonary function. In addition, we had been demonstrated that diabetes without cardiovascular autonomic neuropathy (CAN) presented cardiac autonomic dysfunction and this might be linked with low exercise adaptation influencing cardiac output and rate of circulatory adjustment. Subjects with type 2 diabetes without CAN presented higher cardiac sympathetic modulation in resting condition; however the response of cardiac autonomic modulation remains preserved after active postural maneuver, possibility due to lack of CAN in this group. The use of the symbolic analysis in the periodic evaluation of subjects with type 2 diabetes may help in the early diagnosis of cardiac autonomic imbalance and even CAN which allows interventions and guidance to be provided before greater complications become established. In this speech we will present our recent findings about cardiopulmonary dysfunction, inflammation and HRV and their clinical implications.

Biography

Cristina is PhD student in Physiotherapy at Federal University of São Carlos. She works in researches about Diabetes in Cardiovascular Physiotherapy Laboratory since 2010, studying in Master Degree cardiorespiratory fitness, pulmonary function and inflammation in type 2 diabetes and this research was presented in three International Congress (15th International & 14th European Congress of Endocrinology ICE/ECE 2012, The Endocrine Society's 94th Annual meeting & expo ENDO 2012, European Respiratory Journal ERS 2012). She has being involved in projects about diabetes and autonomic cardiac modulation, cardiopulmonary exercise testing, and nowadays is developing a project with diabetes and phototherapy.

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