

DISSERTATION DEFENSE: Cláudia Regina da Silva Araújo

DATE: 07 12, 2022

TIME: 08:30 am

PLACE: Google Meeting

TITLE: Endothelial function, arterial stiffness, heart rate variability, and clinical outcomes of adults with cardiovascular diseases hospitalized due to COVID-19

Keywords: Endothelium; arterial stiffness; COVID-19; cardiovascular disease.

ABSTRACT:

Introduction: COVID-19 is a systemic disease characterized by pro-inflammatory, pro-oxidative, prothrombotic state, excess circulating cytokines, dysregulation of the nine-year-old system, autonomic dysfunction and tissue lesions, which may cause changes in endothelial function, vascular structure and exacerbation of previous cardiovascular diseases. Thus, patients with underlying cardiovascular risk factors are prone to greater severity of the disease and worse prognosis. Objective: To evaluate the endothelial function, arterial stiffness and heart rate variability (HRV) of adults with CVD hospitalized by COVID-19 and to relate them to clinical outcomes. Methods: Cross-sectional study conducted from July 2020 to February 2021 at Hospital Agamenon Magalhães, Pernambuco, Brazil. A convenience sample of adults of both sexes, aged 40 to 60 years, hospitalized with COVID-19 and previous CVD was selected. Personal data, comorbidities, admission laboratory tests, in addition to clinical outcomes and possible clinical complications during hospitalization were analyzed. Endothelial function, arterial stiffness and HRV were evaluated by peripheral arterial tonometry. The sample was categorized according to endothelial dysfunction and statistical significance was set at 5%. Resultados: Fourteen of the twenty (51.8%) and seven adults included had endothelial dysfunction (median natural logarithm of the reactive hyperemia index of 0.29, interquartile interval between 0.06 and 0.42). The rate of increase normalized for heart rate (75 beats per minute) was significantly high in patients with preserved endothelial function ($p < 0.01$), suggesting a high rate of arterial stiffness. Patients with endothelial dysfunction had higher values of high frequency ($p < 0.03$) of HRV. No differences were observed between the groups in relation to clinical outcomes. Conclusion: This study shows that the endothelial function assessed by PAT seems to be an important early marker of endothelial dysfunction, arterial stiffness and VhF in patients with CVD hospitalized by COVID-19.

EXAMINATION BOARD:

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