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Title: Relationship between haemodynamic and ventilatory responses in patients with diabetes mellitus

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Body: Background: Diabetes Mellitus (DM) is a chronic disease that produces negative impact of exercise capacity. Exercise tolerance has been attributed to reduced cardiovascular performance in these patients. Objective: To evaluate the relationship between functional capacity and haemodynamic responses to maximal exercise in DM-II patients. Materials and Methods: 16 patients (49.4±6.2 years) of both sexes were evaluated. Peak stroke volume (SV), cardiac output (CO) and heart rate (HR) by cardioimpedance were measured. Pulmonary gas exchange breath-by-breath was measured during an incremental exercise testing on a cycle. Peak oxygen uptake ($\dot{V}O_2$), carbon dioxide production ($\dot{V}CO_2$), minute ventilation (\dot{V}_E), end tidal carbon dioxide tension ($P_{et}CO_2$) and $\dot{V}_E/\dot{V}CO_2$ were compared. Data analysis was used to test for normality Shapiro-Wilk test and Pearson correlation. Results: Significant and negative correlation was observed between SV with \dot{V}_E ($r=-0.59$), $\dot{V}CO_2$ ($r=-0.53$) and $\dot{V}O_2/FC$ ($r=-0.60$). Conclusion: The results suggest that SV performance is related to exercise capacity in diabetic individuals. These changes would be the harbinger of reduced exercise capacity in diabetics. Financial support: CNPq and FAPESP 2009/01842-0.