Abstract Group: 4.3. Pulmonary Circulation and Pulmonary Vascular Disease
Keyword 1: Exercise Keyword 2: Pulmonary hypertension Keyword 3: No keyword

Title: Chronotropic response during exercise in schistosomiasis associated PAH as compared to idiopathic PAH

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Body: Chronotropic impairment is associated with decreased survival in Idiopathic Pulmonary Arterial Hypertension (IPAH) patients. However, little is known if this could be one of the factors that influence the different clinical course seen in schistosomiasis associated PAH (Sch-PAH). Objective: To compare the performance and heart rate (HR) response of Sch-PAH and IPAH patients during maximal cardiopulmonary exercise (CPET). Method: Retrospective analysis of 23 CPETs (15 IPAH, 7 Sch-PAH). Gas exchange, ventilatory and chronotropic parameters were analyzed during rest, anaerobic threshold (AT) and peak. HR, VO2 and VO2/HR were analyzed as absolute and as a proportion of maximum predicted values (HR%pred, VO2%pred, VO2/HR%pred) at each point. HR recovery (HRR) was the difference between peak HR and HR on the first minute after exercise interruption. Results: IPAH patients tended to be younger (37.6 ± 10.7 vs 47.8 ± 12.5 yrs, p=0.053), with higher proportion of female patients and similar hemodynamics and VO2%pred. IPAH had higher VO2/HR%pred during rest (0.37 ± 0.12 vs 0.23 ± 0.12, p=0.04), with no differences found at AT or peak exercise. Both groups had similar HR, HR%pred and VE/VCO2 at each point. HRR was also similar between groups (16.9 ± 8.2 vs 14.8 ± 12.6bpm, for IPAH and Sch-PAH respectively, p=0.72). Conclusion: No differences were found in HR response between IPAH and Sch-PAH. Although VO2/HR was higher for resting iPAH, this difference was not found during exercise. Our results suggest that chronotropic impairment may not be the mechanism explaining the survival difference seen in IPAH and Sch-PAH.