

European Respiratory Society Annual Congress 2013

Abstract Number: 4227

Publication Number: P5146

Abstract Group: 4.1. Clinical respiratory physiology, exercise and functional imaging

Keyword 1: Exercise **Keyword 2:** Pulmonary hypertension **Keyword 3:** Chronic disease

Title: Comparability of shuttle walk test with 6-minutes walk test in pulmonary diseases with emphasis on pulmonary arterial hypertension

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Body: Introduction.Exercise testing is useful to assess prognosis and response to treatment, especially in pulmonary arterial hypertension (PAH). Although 6-minute walk test (6MWT) is the test of choice, it might be harmful due to possible syncope and deterioration of right heart function in “over-motivated” young patients (already occurred in two our young PAH patients). Aims and Objectives.To compare 6MWT with shuttle walk test (SWT), which might be safer since it is regulated and has to be stopped not only due to symptoms but also when sub-maximal heart rate or maximal distance (590m) is attained. Methods.SWT and 6MWT were performed on consecutive days in 65patients with pulmonary diseases, 20 of them had PAH (3idiopathic, 11chronic thromboembolic, 3associated with connective tissue disease, 1with histiocytosis, 1with severe hypothyreosis, 1undetermined) and in 5healthy controls. Results.SWT strongly correlated with 6MWT($r=0.81$, $p<0.05$, figure). The distance in SWT was lower compared to 6MWT in PAH(467,158 vs. 484,124, NS) and other patients(433,166 vs. 403,210, NS) but significantly only in controls(590,0 vs. 680,84, $p<0.05$, all mean,SD).

Conclusions.According to excellent correlation between both tests, SWT might be option for assessing exercise capacity in young “over-motivated” patients with PAH in whom 6-MWT might be harmful due to exercise overload, what has to be proved.