DOES 6-MINUTE WALK TEST PREDICT CLINICAL EVENTS IN PULMONARY ARTERIAL HYPERTENSION? A META-ANALYSIS OF 22 STUDIES

ACC Moderated Poster Contributions
McCormick Place South, Hall A
Sunday, March 25, 2012, 9:30 a.m.-10:30 a.m.

Session Title: Pulmonary Hypertension Prognosis/Outcomes
Abstract Category: 30. Pulmonary Hypertension
Presentation Number: 1131-545

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Background: 6-minute walk test (6MWT) is usually used as end-point in clinical trials to assess the benefit of therapies in patients with pulmonary arterial hypertension (PAH). The purpose of this study was to verify whether improvement in 6MWT is associated with reduced incidence of clinical outcomes in PAH.

Methods: the MEDLINE and Cochrane databases, ISI Web of Science and SCOPUS were searched for articles about PAH treatment until August 2011. All randomized trials assessing functional capacity by 6MWT at baseline and at end of follow-up and including clinical end-points (all-cause death, hospitalization for PAH and/or lung or heart-lung transplantation, initiation of PAH rescue therapy) were included in meta-analysis. Meta-analysis was performed to assess the influence of treatments on outcomes. Meta-regression analysis was performed to test the relationship between 6MWT changes and outcomes. The influence of baseline patients’ characteristics, 6MWT at baseline, Detsky quality score, follow-up and study publication year were also explored. Macaskill’s modified test was used to assess the presence of publication bias.

Results: 22 trials enrolling 3,112 participants were included. Active treatments led to significant reduction in the risk of all-cause death (odds ratio [OR]:0.429; 95% confidence interval [CI]:0.277 to 0.664; p<0.01), hospitalization for PAH and/or lung or heart-lung transplantation (OR:0.442; CI:0.309 to 0.632; p<0.01), initiation of PAH rescue therapy (OR:0.555; CI:0.347 to 0.889; p=0.01) and composite outcome (OR:0.400; CI:0.313 to 0.510; p<0.01). In meta-regression analysis, no relationship between 6MWT changes from baseline to end of follow-up and outcomes was detected. Only baseline 6MWT values influenced the relationship between changes in 6MWT and hospitalization for PAH and/or lung or heart-lung transplantation that became weakly significant (p=0.042). There was no heterogeneity among trials included in meta-analysis. No publication bias was detected.

Conclusions: improvement in 6MWT, induced by pharmacological treatment, does not reflect reduction in clinical outcomes.