Oral Anticoagulation for Pulmonary Arterial Hypertension: Systematic Review and Meta-analysis

Authors

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Abstract

Background

Uncertainty exists about the benefit of oral anticoagulation in the treatment of pulmonary arterial hypertension (PAH), which is a lethal disease. We aimed to review and quantify the effect of oral anticoagulants in overall survival of PAH patients.

Methods

We searched for randomized and observational studies that evaluated oral anticoagulants in PAH in the electronic databases MEDLINE, CENTRAL and ISI Web of Knowledge (December 2013). Review articles and references were also screened. We performed a random effects meta-analysis to estimate pooled HRs and 95% confidence intervals. Statistical heterogeneity was evaluated using the I 2 test.

Results

No randomized controlled trials were identified. Nine cohort studies (2 prospective and 7 retrospective) of overall moderate quality that enrolled 1730 PAH patients were included. Oral anticoagulation (warfarin) was associated with a 31% mortality risk reduction (HR, 0.69; 95% confidence interval, 0.57-0.82; I 2 = 28%). Subgroup and sensitivity analyses showed similar results and no significant heterogeneity.

Conclusions

There is no randomized evidence to support the use of oral anticoagulation in PAH. Pooled results from cohort studies suggest a survival benefit, but the moderate study quality, the high risk of publication bias, and the methodological limitations inherent in the analysis of observational studies preclude a definite conclusion. There is an urgent need for pragmatic randomized evidence to definitely answer this important clinical question.