

Pulmonary Embolism Thrombolysis

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Letter to Editor

Currently, thrombolytics treatment is controversial in intermediate and high risk pulmonary embolism (PE) patients. The use of thrombolytics (tenecteplase) after heparin was compared with the use of placebo after heparin in multicentered randomized double blind studies [1]. Primary outcome was defined as overall mortality within 7 days and hemodynamics decompensation. Intermediate risk was defined as presence of right ventricular dysfunction by echocardiography and computerized tomography and presence of troponin-I and troponin-T positivity as a biomarker of myocardial injury

Major adverse events were defined as presence of major extracranial hemorrhage and hemorrhagic and/or ischemic stroke.

One thousand five patients were included into the study. Five hundred six patients were in group of thrombolytics and four hundred ninety nine patients were in placebo (heparin) group. Primary outcomes were observed in 2.6% of patients in the group of thrombolytics patients. It was observed that thrombolytics treatment decreased primary outcomes by 44% (odds ratio, 0.44; 95% confidence interval, 0.23 to 0.87; P=0.02) There was no significant difference between mortality rate of randomized two groups for 7 days mortality (1.2% mortality rate in thrombolytics group and 1.8% in heparin group, p=0.42)

Extracranial hemorrhage was seen 6.3% in group of tenecteplase and 1.2% in placebo group.

Stroke was seen 2.4% in group of tenecteplase and 0.2% in placebo group (P=0.003). There was no significant difference between two groups from the point of 30 days of mortality (2.4 % vs. 3.2%, p=0.42)

PEITHO study with high expectations was published in first volume of New England Journal of Medicine on April, 2014. The results of study are very interesting to guide the traditional expectations. Although the results of thrombolytics were seen better from the point of hemodynamic decompensation and mortality, efficacy of thrombolytics treatment used alone on mortality has been seen as

ineffective. Complication of bleeding was seen in thrombolytics group as expected. In PEITHO study, mortality rate for submassive PE patients was less than previous PE studies [2].

It would be good to see the PE related mortality in the present study. It is also interesting that 25% of the study population has previous history of venous thromboembolism (VTE) episode that is unexpectedly higher rate compared to the literature [3]. It would be also good to know the number of patients who had previous history of PE. There is also no information about right ventricular dysfunction of those patients who had previous episode of VTE. Fifty-five percent of the study population has been reported as having right ventricular dysfunction in the present study and almost all of those patients have high level of troponin I or troponin T. Serum troponin I and troponin T are elevated in 30 to 50 percent of patients who have a moderate to large pulmonary embolism in literature [4,5]. Therefore other factors and diseases leading to high level of troponins should be documented for better understanding.

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