

Adjunctive effect of hyperbaric oxygen treatment after thrombolysis on left ventricular function in patients with acute myocardial infarction

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Abstract:

Background The role of hyperbaric oxygen in patients with acute myocardial infarction is controversial, ranging from not beneficial to having a favorable effect. This randomized study was conducted to further assess the benefit of hyperbaric oxygen treatment after thrombolysis on left ventricular function and remodeling in patients with acute myocardial infarction.

Methods Seventy-four consecutive patients with first acute myocardial infarction were randomly assigned to treatment with hyperbaric oxygen treatment combined with streptokinase (HBO+) or streptokinase alone (HBO-).

Results There was a significant decrease of end-systolic volume index from the first day to the third week in HBO+ patients compared with HBO- patients (from 30.40 to 28.18 vs from 30.89 to 36.68 mL/m², $P < .05$) accompanied with no changes of end-diastolic volume index in HBO+ compared with increased values in HBO- (from 55.68 to 55.10 vs from 55.87 to 63.82 mL/m², $P < .05$). Ejection fraction significantly improved in the HBO+ group and decreased in the HBO- group of patients after 3 weeks of acute myocardial infarction (from 46.27% to 50.81% vs from 45.54% to 44.05 %, $P < .05$).

Conclusions Adjunctive hyperbaric oxygen therapy after thrombolysis in acute myocardial infarction has a favorable effect on left ventricular systolic function and the remodeling process