Effects of Immediate Blood Pressure Reduction on One Year Mortality and Major Disability in Patients with Acute Ischemic Stroke

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Background

Introduction Although elevated blood pressure (BP) is very common in patients with acute ischemic stroke, the management of hypertension among them remains controversial. Hypothesis We tested the effect of immediate BP reduction on one year mortality and major disability in acute ischemic stroke patients. Methods The China Antihypertensive Trial in Acute Ischemic Stroke, a randomized, single-blind, blinded end-points trial, was conducted in 4,071 patients with ischemic stroke within 48 hours of onset and elevated systolic BP (SBP). Patients were randomly assigned to receive antihypertensive treatment (N=2,038) or to discontinue all antihypertensive medications (N=2,033) during hospitalization. Post-treatment follow-ups were conducted at 3 and 12 months after hospital discharge. The primary outcome was a composite of death and major disability at 12 months follow-up.

Results

Mean SBP was reduced 12.7% in the antihypertensive treatment group and 7.2% in the control group within 24 hours after randomization (P<0.001). Mean SBP was 137.3 mmHg in the antihypertensive treatment group and 146.5 in the control group at day 7 after randomization (P<0.001). At 12 months follow-up, study outcomes were obtained in 96.1% of participants. 79.9% of the patients in the antihypertensive treatment group and 73.3% in the control group reported the use of antihypertensive medications (P<0.001). SBP was 138.8 mmHg in the antihypertensive treatment group and 140.2 in the control group (P<0.001). Among patients in the antihypertensive treatment group, 23.1\% (453/1965) died or had a major disability, compared with 21.0\% (410/1949) in the control group (odd ratio 1.12 [95\% CI 0.97 to 1.31], P=0.13). Hazard ratios for all-cause mortality (1.13 [0.87 to 1.47], P=0.35), recurrent stroke (0.97 [0.73 to 1.28], P=0.80), and vascular events (0.96 [0.74 to 1.24], P=0.76) were not statistically significant comparing the antihypertensive treatment group to the control group. The effect of antihypertensive treatment did not differ by pre-defined subgroups (all P>0.34). Conclusions Among patients with acute ischemic stroke, BP reduction with antihypertensive medications during hospitalization did not reduce the composite outcome of death and major disability in one year.

Disclosure