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Mannitol and Outcome in Intracerebral Hemorrhage: Propensity Score and Multivariable Intensive Blood Pressure Reduction in Acute Cerebral Hemorrhage Trial 2 Results.

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BACKGROUND AND PURPOSE:
Mannitol is often used to reduce cerebral edema in acute intracerebral hemorrhage but without strong supporting evidence of benefit. We aimed to determine the impact of mannitol on outcome among participants of the Intensive Blood Pressure Reduction in Acute Cerebral Hemorrhage Trial (INTERACT2).
METHODS:
INTERACT2 was an international, open, blinded end point, randomized controlled trial of 2839 patients with spontaneous intracerebral hemorrhage (<6 hours) and elevated systolic blood pressure allocated to intensive (target systolic blood pressure, <140 mm Hg within 1 hour) or guideline-recommended (target systolic blood pressure, <180 mm Hg) blood pressure-lowering treatment. Propensity score and multivariable analyses were performed to investigate the relationship between mannitol treatment (within 7 days) and poor outcome, defined by death or major disability on the modified Rankin Scale score (3-6) at 90 days.
RESULTS:
There was no significant difference in poor outcome between mannitol (n=1533) and nonmannitol (n=993) groups: propensity score-matched odds ratio of 0.90 (95% confidence interval, 0.75-1.09; P=0.30) and multivariable odds ratio of 0.87 (95% confidence interval, 0.71-1.07; P=0.18). Although a better outcome was suggested in patients with larger (≥15 mL) than those with smaller (<15 mL) baseline hematomas who received mannitol (odds ratio, 0.52 [95% confidence interval, 0.35-0.78] versus odds ratio, 0.91 [95% confidence interval, 0.72-1.15]; P homogeneity<0.03 in propensity score analyses), the association was not consistent in analyses across other cutoff points (≥10 and ≥20 mL) and for differing grades of neurological severity. Mannitol was not associated with excess serious adverse events.
CONCLUSIONS:
Mannitol seems safe but might not improve outcome in patients with acute intracerebral hemorrhage.