

## **Significance of intraventricular hemorrhage in acute intracerebral hemorrhage: intensive blood pressure reduction in acute cerebral hemorrhage trial results.**

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### **BACKGROUND AND PURPOSE:**

Intraventricular hemorrhage (IVH) with spontaneous intracerebral hemorrhage indicates a poor prognosis but uncertainty exists over the pattern of association. We aimed to elucidate risk associations of IVH and outcome in the Intensive Blood Pressure Reduction in Acute Cerebral Hemorrhage Trial (INTERACT2) data set.

### **METHODS:**

INTERACT2 was an international prospective, open-blinded end point, randomized controlled trial in 2839 patients with intracerebral hemorrhage (<6 hours) with elevated systolic blood pressure randomly assigned to intensive (target systolic blood pressure <140 mm Hg) or guideline-based (systolic blood pressure <180 mm Hg) blood pressure management. Associations of baseline IVH in 740 of 2613 (28%) patients and poor outcomes (death and major disability defined on the modified Rankin Scale) at 90 days were determined in linear and logistic regression models.

### **RESULTS:**

Patients with IVH were significantly older and with greater neurological impairment, history of ischemic stroke, and larger hematomas more often deep hemisphere located at presentation, after adjustment for other baseline variables. Death or major disability occurred in 66% with IVH versus 49% in intracerebral hemorrhage-alone patients (adjusted odds ratio, 1.68; 95% confidence interval, 1.38-2.06;  $P<0.01$ ). Associations of IVH volume and clinical outcomes were strong and near continuous. Adjusted analyses by thirds of IVH volume indicate thresholds of  $\approx 5$  and 10 mL for significantly increased odds of death and death or major disability, respectively.

### **CONCLUSIONS:**

A strong association exists between the amount of IVH and poor outcome in intracerebral hemorrhage. An IVH volume of 5 to 10 mL emerges as a significant threshold for decision making on prognosis in these patients.