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He J, et al. Effects of immediate blood pressure reduction on death and major disability in patients with acute ischemic stroke: the **CATIS** randomized clinical trial. JAMA. 2014 Feb 5;311(5):479-89.

BLUF:
Modestly lowering blood pressure acutely in ischemic stroke patients led to no increased death or disability at 14 days or 3 months. However, the absolute BP difference between treated and control patients was only -9.1 mm Hg at 24 hr.

Objectives:
To determine whether immediate blood pressure management prevented death or disability in ischemic stroke patients at 14 days.

Background:
Despite the dogma of allowing a degree of "permissive hypertension" for patients with ischemic stroke, there is insufficient evidence to support either stopping antihypertensives or continuing/starting them in the first hours after the event. The majority of stroke victims become hypertensive, and whether to be aggressive about BP (to minimize cerebral edema, prevent hemorrhagic conversion, etc) or allow it (to prevent watershed infarct) isn't well resolved by clinical studies.

Methods:
A multicenter, single-blind RCT at 26 hospitals in China. Enrolled patients were >22 years old with confirmed ischemic stroke who had SBP >140 mm Hg and <220 mm Hg. Patients were severe heart failure, AMI/UA, atrial fibrillation, dissection, resistant HTN and coma were excluded. Patients treated with rtPA were excluded. Patients were randomized to receive oral and IV antihypertensives to achieve a 10-25% reduction in BP within 24 h of randomization. Primary outcome was death/major disability at 14 days; secondary outcome was all-cause death or major disability at 3 months.

Results/conclusions:
4071 patients were enrolled and ~2000 were randomized to each arm. The groups were similar in age, baseline, PMH and ischemic stroke subtype. 24 hr after randomization, BP in the control group fell by 12 points vs 22 points in the treatment group, which was statistically significant. At 14 days, the mean BP was 135 in treatment vs 144 in control group. There was no difference in primary or secondary outcomes at 14 days or at 3 months. The authors concluded that actively lowering BP early on in the course of ischemic stroke treatment did not cause increased death or disability at 14 days.

Discussion:
This was a large, multicenter, randomized study looking at a treatment strategy demonstrating a modest reduction in BP and no adverse effects. Results were statistically significant, but is a 10 mm Hg drop in BP clinically significant? The majority of study participants had mild-moderate symptoms (NIHSS < 15), and most of such patients have good outcomes anyway. The participants and treatment teams were not blinded. Time to randomization was a full 15 hours, which limits the applicability of the findings to the ER. Finally, Chinese stroke patients are younger, more often smokers and receive more often heparin than in the US.

Conclusion:
Early, modest antihypertensive therapy for patients with ischemic stroke does not appear to lead to disability or death. A subsequent study with more severe stroke victims and/or more aggressive treatment may be more suited to show a clinically relevant effect.