sustained hypertension at the baseline visit (systolic BP >140 mm Hg) and during ambulatory BP monitoring (daytime systolic BP >135 mm Hg), treatment with ≥2 antihypertensive drugs, and signed informed consent. Patients were monitored during 6 clinic visits (ambulatory BP monitoring, echocardiography, HOTMAN, and pulse wave velocity; not all performed at each visit); they also maintained a BP diary.

Overall, hemodynamic status of the IHM group improved more (49% and 50%, according to both investigators) than did the control group (27% and 29%; p=0.038 and p=0.008, respectively). Joint improvement of hemodynamic status and BP was superior in the treatment group (42% and 43%) than in the control group (22% and 23%; p=0.014 and p=0.030, respectively). Drug selection according to the HOTMAN responses was associated with fewer investigator-assessed side effects (1.18±1.17) than was the conventional drug-selection process (1.91±2.09).

Data from BEAUTY suggest that the noninvasive HOTMAN approach is associated with more favorable hemodynamic changes in patients with uncontrolled hypertension, better joint control of hemodynamics and BP, and fewer side effects. Future studies are necessary to determine whether treatment strategies guided by integrated hemodynamic management will translate into improved clinical outcomes that are cost-effective.

No Long-Term Benefit of Candesartan for Patients With Acute Stroke

Written by Toni Rizzo

Among patients with acute stroke, approximately 75% have systolic blood pressure (BP) ≥140 mm Hg [Qureshi AI et al. *Am J Emerg Med* 2007; Leonard-Bee J et al. *Stroke* 2002]. Elevated BP in the acute phase of stroke has been associated with poor short- and long-term outcomes [Leonard-Bee J et al. *Stroke* 2002]. The Phase 2, prospective, randomized Acute Candesartan Cilexetil Therapy in Stroke Survivors study [ACCESS] in 500 patients with stroke found that vascular events and mortality were significantly lowered by candesartan, without a significant difference in adverse event rates [Schrader J et al. *Stroke* 2003]. However, large clinical trials have yet to demonstrate a beneficial effect of BP lowering in the acute phase of stroke.

The Scandinavian Candesartan Acute Stroke Trial [SCAST; NCT00120003] did not demonstrate a difference at 6 months between BP lowering with candesartan and placebo for 7 days in the acute phase of stroke (HR, 1.09; 95% CI, 0.84 to 1.41; p=0.52) [Sandset EC et al. *Lancet* 2011]. The aim of this SCAST prespecified secondary analysis, presented by A. G. Hornslien, MD, Oslo University Hospital Ullevaal, Oslo, Norway, was to investigate whether a difference might be observed over longer follow-up.

In total, 2029 patients with acute ischemic or hemorrhagic stroke and systolic BP ≥140 mm Hg were randomly assigned to candesartan versus placebo for 7 days. Of these patients, long-term follow-up data were available in 632 patients who were allocated to candesartan and 624 patients who were allocated to placebo. Follow-up data were collected from national patient, hospital, and death registries in Norway, Sweden, and Denmark. The primary end point was the composite of stroke, myocardial infarction, or vascular death. The secondary end points were recurrent stroke and all-cause death. Time to first event was analyzed by Cox proportional-hazards regression with adjustment for baseline variables (age, stroke type, systolic BP, and Scandinavian Stroke Scale score).

Baseline characteristics were well balanced between the 2 arms. At 3 years, there was no significant difference in the primary end point between the candesartan group (28.2%) and the placebo group (32.5%; adjusted HR, 0.87; 95% CI, 0.71 to 1.07; p=0.19).

There was no significant difference in the recurrent stroke rate between the candesartan group (16.9%) and the placebo group (adjusted HR, 0.83; 95% CI, 0.64 to 1.07; p=0.15) at 3 years. Similarly, no significant difference was observed in the rates of all-cause death in the candesartan group (17.9%) compared with the placebo group (18.8%; adjusted HR, 1.00; 95% CI, 0.77 to 1.30; p=1.00).

In this study, candesartan treatment during the acute phase of stroke in patients with elevated BP had no significant effect on the occurrence of vascular events, recurrent stroke, or death at 3 years. These results are consistent with the 6-month results and support the conclusion that there is no indication for routine BP-lowering treatment with candesartan in the acute phase of stroke.