The hierarchical primary end point was the difference in change from baseline in the 2-hour oral glucose tolerance test (OGTT) with amiloride and HCTZ at 12 and 24 weeks; if significant, the difference in change from baseline in the 2-hour OGTT between the half-dose combination of treatments and HCTZ.

A total of 399 patients were included in the analysis: 132 taking amiloride, 134 taking HCTZ, and 133 taking the combination treatment. The mean age of the patients was 62 years and 39% were women; the home BP was 149/87 mm Hg and the clinic BP was 154/91 mm Hg. At baseline, 44 (33%) patients had impaired glucose tolerance.

Both amiloride and the amiloride/HCTZ combination produced a significantly greater reduction in glucose compared with HCTZ. Amiloride and HCTZ alone produced similar BP reduction at both 12 and 24 weeks. However, the amiloride/HCTZ combination lowered BP by 3.4 mm Hg more than each drug alone (95% CI, 0.9 to 5.8; $P=.007$). The amiloride/HCTZ combination also produced a significantly greater increase in renin levels than HCTZ alone.

The rates of adverse events and withdrawals were comparable between the groups, with the exception of hyperkalemia, which occurred more frequently with amiloride and the combination treatment compared with HCTZ. However, Prof Brown noted there were no increases in potassium > 5.8 mmol/L.

The combination of amiloride and HCTZ did not adversely affect blood glucose and potassium but improved the BP-lowering effect of each drug, concluded Prof Brown. The PATHWAY-2 and PATHWAY-3 trials demonstrated that potassium-sparing diuretics are safe and effective and may be the preferred choice for the treatment of hypertension.

Long-term Euro-ASA Registry Data: Alcohol Septal Ablation Is Safe and Effective

Written by Muriel Cunningham

The long-term safety of alcohol septal ablation (ASA) to decrease the pressure gradient of the left ventricle (LV) in patients with hypertrophic cardiomyopathy has been questioned despite single-center trials and the establishment of national registries. Josef Veselka, MD, PhD, Charles University, Prague, Czech Republic, presented long-term clinical outcomes from the multinational Euro-ASA registry. The study end points were (1) survival and clinical outcome in patients treated with ASA; (2) predictors of mortality events and clinical outcome; and (3) relationships among the dose of alcohol injected during ASA, the improvement of LV outflow tract pressure gradient, and the occurrence of complete heart block.

Table 1. Baseline and Follow-up Characteristics

Characteristic	Baseline	Follow-up[a]	*P* Value
Age, y	58 ± 14	63 ± 13	—
Dyspnea, NYHA class	2.9 ± 0.5	1.6 ± 0.7	< .001
Angina, CCS class	1.3 ± 1.2	0.7 ± 0.8	< .001
Episodes of syncope, %	22	7	< .001
LV outflow gradient, mm Hg	67 ± 36	16 ± 21	< .001
LV diameter, mm	43 ± 6	46 ± 6	< .001
LV ejection fraction, %	70 ± 10	66 ± 10	< .001
Basal septum thickness, mm	20 ± 4	15 ± 4	< .001

CCS, Canadian Cardiovascular Society; LV, left ventricular.

[a]The median (interquartile range) follow-up for survival was 5 y (2.1 to 8.2).

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The study population included 1275 consecutive patients treated with ASA at 10 centers in Europe. The mean age of the patients was 58 ± 14 years, and 49% were female. Patient characteristics at baseline and follow-up are presented in Table 1.

Thirteen patients (1%) died within 30 days of ASA, and 16 patients (1.3%) experienced intraprocedural and early (within 2 days) postprocedural sustained ventricular tachycardia/ventricular fibrillation requiring electrical cardioversion. Thirty-seven percent of patients (n = 468) had intraprocedural complete heart block, with 151 cases (12%) requiring permanent pacemaker implantation. There was a significant association between higher doses of alcohol and complete heart block (HR, 1.19; 95% CI, 1.05 to 1.35; $P=.006$). Optimal doses of alcohol appear to be 1.5 to 2.5 mL.

A lower LV outflow tract gradient at the last clinical visit was independently associated with the final NYHA class ≤ 2 (HR, 0.98; 95% CI, 0.97 to 0.99; $P<.01$).

A total of 171 patients (13%) died during follow-up, resulting in a post-ASA all-cause mortality rate of 2.42 deaths per 100 patient-years (95% CI, 2.07 to 2.82). Significant independent predictors of all-cause mortality included higher age at ASA (HR, 1.06; 95% CI, 1.05 to 1.08; $P<.01$), septum thickness before ASA (HR, 1.05; 95% CI, 1.01 to 1.09; $P<.01$), NYHA class before ASA (HR, 1.5; 95% CI, 1.00 to 2.10; $P=.047$), and the LV gradient at the last check-up (HR, 1.01; 95% CI, 1.00 to 1.01; $P=.048$).

Sixty-eight patients (5.3%) had a sudden mortality event (0.98 per 100 patient-years; 95% CI, 0.76 to 1.12). The only independent predictor of sudden death was septum thickness before ASA (HR, 1.07; 95% CI, 1.01 to 1.12; $P=.014$).

"After 2 decades of the introduction of ASA, we can state that this procedure is safe and this procedure is effective," Prof Veselka said. Because the residual obstruction post ASA is a significant factor influencing both long-term functional status and survival, clinicians should take steps to eliminate LV outflow obstruction in these patients.