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COMPARATIVE EFFECTS OF LERCANIDIPINE AND HYDROCHLOROTHIAZIDE ON HYPERTENSION-RELATED CARDIAC AND VASCULAR STRUCTURAL ALTERATIONS

Gino Seravalle, Maria L. Stella, Guido Grassi, Giuseppe Mancia.
Cardiology, Istituto Auxologico Italiano - S.Luca Hpt, Milan, Italy;
Clinica Medica, S.Gerardo Hpt, Monza (MI), Italy.

Objective: To evaluate the effects of a new calcium antagonist, lercanidipine (L), versus hydrochlorothiazide (H) on cardiac and vascular structural alterations associated to hypertension.

Methods: In 24 untreated essential hypertensives (EH, age 47.3±0.5 yrs, mean arterial pressure MAP 115.4±3.6 mmHg), we measured beat-to-beat MAP (Finapres), heart rate (HR, EKG), forearm and calf blood flow (FBF, CBF venous occlusion pletysmography) and calculated forearm and calf vascular resistance at rest (FVR and CVR) and following 12 min of local ischaemia associated with 2 min of isometric exercise (FVR min ,CVR min). Measurements also included echocardiographic assessment of left ventricular mass index (LVMI). The protocol, performed in the no drug condition, was repeated following 6 and 12 month treatment with L (10 mg/day, n=12) or H (25 mg/day, n=12) according to a double-blind randomized design.

Results: After 6 months, treatment with L and H caused superimposable reductions in MAP (-12.9±1.1 vs -10.8±1.4 mmHg, $p<0.01$ for both) and LVMI (-9.5±2.0 vs -9.1±1.8 %, $p<0.05$) without affecting HR values. In contrast the reduction in FVRmin and CVRmin was significantly greater for L than H (-29.4± 3 vs -7.8±1.5% and -21.1± 2 vs -4.3±0.9%, $p<0.01$).This was the case also after 12 months of treatment, the LVMI reduction being superimposable in the 2 groups while the FVRmin and CVRmin reductions being more than 50% greater in the L-treated than in H-treated group.

Conclusions: These data provide evidence that 1) therapeutical regression of cardiac and vascular hypertrophy have a similar temporal profile and 2) L is superior to H in favouring the regression of vascular hypertrophy

Key Words: Regression of Vascular and Cardiac Hypertrophy, Antihypertensive Drugs, Vascular Structural Alterations