

[Ultrasonographic evaluation of cardiac and vascular hypertrophy in patients with essential hypertension]

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Abstract

High resolution ultrasonography allows the accurate and reproducible measurement of thickness and lumen diameter of carotid arteries. We investigated Common carotid (CCA) and bifurcation intima-media thickness in 40 hypertensive patients, 20 without left ventricular hypertrophy (LVH) (age 42 +/- 10 years) and 20 with LVH (age 44 +/- 12 years), all free from other important cardiovascular risk factors. Both carotid axes were scanned from different views (anterior, lateral, posterior) on traversal and longitudinal section, using a high resolution steerable (HRS) 5.0 MHz linear array. Carotid diameter and thickness from longitudinal section were measured. CCA parameters were taken 20 mm caudally to flow divider. Using the B-mode as a guide we assessed LVH presence with M-mode technique when left ventricular mass index (LVMI) > or = 135 g/m² for men and > or = 110 g/m² for women. In hypertensive patients with LVH, left ventricular mass was significantly higher than in those without LVH (156 +/- 38 vs 98 +/- 10 g/m², p < 0.01). Even blood pressure was significantly higher in hypertrophic group (172 +/- 21/108 +/- 9 vs 158 +/- 11/99 +/- 12 mmHg, p < 0.01), while there was no difference in serum glycemia, triglycerides, total and fractioned cholesterol levels. The intima-media thickness scanned in both CCA and bifurcation resulted significantly higher in hypertensives with LVH (CCA: 0.85 +/- 0.02 mm vs 0.65 +/- 0.02 mm; BIF: 0.93 +/- 0.04 mm vs 0.70 +/- 0.03 mm, p < 0.01). We also noticed a statistically significant correlation between carotid wall thickness and left ventricular mass index.