

¹²³I-MIBG myocardial imaging in hypertensive patients: Abnormality progresses with left ventricular hypertrophy

Isao MITANI, Shinichi SUMITA, Nobukazu TAKAHASHI,
Hisao OCHIAI and Masao ISHII

Second Department of Internal Medicine, Yokohama City University Hospital

Twenty-seven patients with essential hypertension were prospectively studied with ¹²³I-labeled metaiodobenzyl-guanidine (¹²³I-MIBG) to assess the presence and location of impaired sympathetic innervation in hypertrophied myocardium. Thirteen patients had left ventricular hypertrophy on echocardiography, and 14 had normal echocardiograms. The wash-out ratio of ¹²³I-MIBG in these two groups did not differ significantly (35.3 ± 6.1 and 35.4 ± 5.1) but was higher than in control subjects (29.4 ± 6.7). The delayed heart-to-mediastinum count ratio was lower in the patients with hypertrophy than in the patients without hypertrophy (1.93 ± 0.28 and 2.22 ± 0.21 ; $p < 0.05$) and the control subjects (1.93 ± 0.28 and 2.33 ± 0.25 ; $p < 0.05$). On SPECT imaging, abnormalities in segmental uptake were frequent at the posterior and postero-lateral wall in both groups, although the hypertrophic group had more significant impairment. Our results lead to the hypothesis that hypertension in more advanced stages may be associated not only with hypertrophic changes but also with more advanced regional impairment of cardiac sympathetic innervation.

Key words: metaiodobenzylguanidine (MIBG), single-photon emission computed tomography (SPECT), hypertension, left ventricular hypertrophy, adrenergic nerve