

## Effects of diltiazem on myocardial perfusion abnormalities during exercise in patients with hypertrophic cardiomyopathy

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The effect of diltiazem on myocardial ischemia in patients with hypertrophic cardiomyopathy (HCM) was evaluated by exercise myocardial  $^{201}\text{Tl}$  single photon emission computed tomography (SPECT). Exercise myocardial SPECT was performed before and 8 weeks after oral administration of diltiazem (180 mg/day) in 20 patients with HCM who showed transient perfusion defects on exercise myocardial  $^{201}\text{Tl}$  SPECT under control conditions. SPECT images were divided into 17 segments. The  $^{201}\text{Tl}$  perfusion defects were visually scored and evaluated as the defect score. The transient dilation index was calculated as an index of subendocardial ischemia. Improvement of the defect score was demonstrated in 15 patients after the administration of diltiazem. The mean defect score decreased significantly from  $9.90 \pm 5.17$  to  $5.50 \pm 4.89$  ( $p < 0.0001$ ). Although 16 of 20 patients showed an abnormal transient dilation index before diltiazem treatment, 16 showed improvement and 13 of these normalized after diltiazem therapy. The mean transient dilation index decreased from  $1.16 \pm 0.10$  to  $1.02 \pm 0.09$  ( $p < 0.0001$ ). In conclusion, diltiazem prevents or diminishes myocardial ischemia in patients with HCM.

**Key words:** hypertrophic cardiomyopathy, exercise  $^{201}\text{Tl}$  scintigraphy, myocardial ischemia, diltiazem