

## Relationship between thallium-201 myocardial SPECT and findings of endomyocardial biopsy specimens in dilated cardiomyopathy

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The purpose of this study was to clarify which myocardial histological findings associated with dilated cardiomyopathy (DCM) are reflected in quantitative  $^{201}\text{Tl}$  myocardial SPECT. We obtained studied SPECT images from 21 patients with DCM 10 minutes and 2 hours after they received an injection of 111 MBq  $^{201}\text{Tl}$  at rest. We calculated the percent coefficient of variation of myocardial  $^{201}\text{Tl}$  counts [%CV(Tl)], the washout rate (WR), standard deviation of WR [SD(WR)], extent score (ES) and severity score (SS). We used image analysis to measure % fibrosis, % myocytes, the ratio of fibrous tissue to myocyte tissue (F/My), myocyte size and standard deviation of myocyte size [SD(My)] in left ventricular endomyocardial biopsy specimens. The %CV(Tl) was correlated with % fibrosis and F/My. The ES and SS also correlated with F/My. The correlation between SD(WR) and SD(My) was significant. The present findings suggest that %CV(Tl), ES and SS of rest  $^{201}\text{Tl}$  SPECT reflect myocardial fibrosis and that the standard deviation of washout reflects the distribution of myocyte size.

**Key words:** thallium, endomyocardial biopsy, dilated cardiomyopathy