

Discordant iodine-123 metaiodobenzylguanidine uptake area reflects recovery time dispersion in acute myocardial infarction

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Iodine-123 metaiodobenzylguanidine (MIBG) uptake was reported to be reduced compared to Tl-201 (Tl) in acute myocardial infarction (AMI). Within such an area, degrees of both sympathetic neural function and ischemic myocardial cell damage are considered to be greatly dispersed. These kinds of damage were reported to effect repolarization time in myocardial cells, and we evaluated our hypothesis that extension of the discordant MIBG uptake area correlates with recovery time (RT) dispersion and relate ventricular arrhythmias in AMI. MIBG and Tl images were obtained in AMI patients. Regional Tl or MIBG uptake was estimated in 9 segments of SPECT by using four-point scoring. The total score was the sum of scores in 9 SPECT segments. Δ Tl-MIBG was calculated by subtracting the total MIBG score from the total Tl score. Corrected RT (RTc) was measured as a signal-averaged ECG. RTc dispersion was defined as the difference between maximal and minimal RTc. The patients were assigned to two groups (group A; \leq Lown 4a, group B; \geq Lown 4b) according to the results of 24-hour Holter monitoring. A positive correlation between RTc dispersion and Δ Tl-MIBG was found. Δ Tl-MIBG and RTc dispersion in group B were greater than those in group A. These results suggested that Δ Tl-MIBG could be used to predict the development of malignant ventricular arrhythmias.

Key words: iodine-123 metaiodobenzylguanidine, acute myocardial infarction, ventricular arrhythmia, recovery time dispersion