Differnciation of Tachycardia Induced Cardiomyopathy and Dilated Cardiomyopathy

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The clinical manifestations of tachycardia-induced cardiomyopathy (TIC) and dilated cardiomyopathy (DCM) with tachyarrhythmia are similar. It is difficult to differentiate between them prior to treatment. We evaluated clinical data derived from 12-lead electrocardiography, echocardiography, and 123I-metaiodobenzylguanidine (123I-MIBG) scintigraphy of 21 patients with TIC (TIC group, 60.3±18.5 years, 11 males) and 24 patients with DCM (DCM group 51.7±18.6 years, 21 males). The ejection fraction (EF) prior to treatment was similar in both groups. However, the EF of the TIC group improved from 37.3±11.4% to 53.5±7.7% after treatment, while that of the DCM group did not improve. The left ventricular diastolic and systolic dimensions (LVDd LVDs) were smaller in the TIC group than that in the DCM group (LVDd 51.7±6.7 mm vs 63.3±9.0 mm, LVDs 40.8±7.4 mm vs 53.6±10.1 mm, P<0.05). The QRS duration in aVR lead during tachycardia was longer in the DCM group than that in the TIC group (0.094±0.014 ms vs 0.074±0.011 ms, P<0.05). The washout ratio was higher in the DCM group than that in the TIC group (55.5±14.7% vs 31.4±8.1%, P<0.05).

Conclusion: LVD at initial echocardiography, QRS duration in lead aVR, and the washout ratio may be useful in differentiating TIC from DCM in patients with left ventricular dysfunction and tachyarrhythmia.

Keywords: tachycardia induced cardiomyopathy, electrocardiography, dilated cardiomyopathy.