学位論文の要旨

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主論文の題名

Role of haemodialytic therapy on left ventricular mechanical dyssynchrony in patients with end-stage renal disease quantified by speckle-tracking strain imaging

主論文の要旨

Abnormal myocardial loading can contribute to left ventricular (LV) mechanical dyssynchrony in patients with end stage renal disease (ESRD). Therefore, we sought to characterize and quantify LV function and dyssynchrony in patients with ESRD and to elucidate the impact of hemodialytic (HD) therapy on these parameters. Twenty-three patients with ESRD (63 ± 11 years) before (pre-dialysis group) and after HD therapy (post-dialysis group), and 28 normal subjects (control group; 60 ± 10 years) were examined by echocardiography speckle-tracking strain imaging. Global and segmental LV peak systolic strain (PSS) were analyzed and LV dyssynchrony was assessed by calculating the standard deviation of the segmental time-to-PSS over longitudinal, circumferential, or radial regions, respectively. LV dyssynchronies in the longitudinal and radial directions were greater in the pre-dialysis group than those in the control group (longitudinal direction: $63 \pm 15^*$ vs. 49 ± 15 msec and radial direction: $47 \pm 29^*$ vs. 16 ± 18 msec, *p <0.05 vs. the control group). HD therapy dramatically improved only radial LV dyssynchrony in the post-dialysis group ($23 \pm 24 \dagger$ msec, †p <0.05 vs. the pre-dialysis group).

In conclusion, the presence of ESRD was associated with LV dyssynchrony and HD therapy improved radial LV dyssynchrony, indicating that only radial LV dyssynchrony is preload-dependent.