Repetitive Evaluation of Fibrillation Cycle Length Predicts the Effect of Bepridil for Conversion of Long-Lasting Persistent Atrial Fibrillation to Sinus Rhythm

Yuya Aoyama, Shinichi Niwano, Hiroe Niwano, Yoshihiro Yumoto, Akira Sato, Jun Kishihara, Tohru Izumi

Department of Cardio-Angiology, Kitasato University School of Medicine, Sagamihara, Japan

Background: Bepridil is effective for conversion of long-lasting persistent atrial fibrillation (AF) to sinus rhythm, but it sometimes takes long time and there is no feasible index to predict its efficacy. Methods: In 45 patients with long-lasting persistent AF, bepridil was administered and continued for 8 weeks with measuring fibrillation cycle length (FCL) in every 2 weeks. FCL was calculated using the spectral analysis of the fibrillation waves in the body surface ECG. Results: AF was interrupted in 25 patients. Time to sinus recovery was 2 weeks in 5, 4 weeks in 7, 6 weeks in 4, and 8 weeks in 9 patients. When comparing these responders and non-responders, clinical backgrounds did not show any difference and neither did temporal changes of QT and heart rate. The FCL and ΔFCL (prolongation in FCL from baseline) did not exhibit difference till 2 week observation point, but those of responders became larger than those of non-responders at later observation points (4 weeks: 181±24 vs. 163±22ms, p<0.05, 6 weeks: 191±24 vs. 167±21ms, p<0.05) (ΔFCL-4 weeks: 24±5 vs. 21±4ms, p<0.05, ΔFCL-6 weeks: 50±6 vs. 24±5ms, p<0.05). Conclusions: Repetitive evaluation of FCL can be a feasible index to predict the efficacy of bepridil therapy.

Keywords: AF, bepridil