There are 3 types of F-wave in typical AFL (Type 1 F-, Type 2 F+/f+, and Type 3 f-/F+). We reported that in patients with low voltage area (LVA, <0.5 mV) extensively in the right atrial free wall (RAFW), positive portion is absent between the F-waves, resulting in type 1. The mechanism for the difference between types 2 and 3 remains unclear. In 75 patients showing type 2 F-wave (44 patients) or type 3 (31), electroanatomical (EA) mapping was performed. We calculated the ratio of LVA to RAFW area from 0 to 6 of clock around the tricuspid annulus in the LAO view. The ratios were not different between types 2 and 3 (6±4% vs 6±5%, P=NS). Projecting F-wave in ECG on EA activation map revealed that the interval from the nadir-to-top of F-wave corresponded to RAFW activation: In type 2, this interval corresponded to the area from 11.3±1.1 to 9.2±1.1 of clock in the LAO view, while in type 3, 1.1±0.7 to 8.9±1.1 (P<0.05). The nadir-to-top amplitude (mV) was 0.22±0.03 in type 2 and 0.32±0.06 in type 3 (P<0.05). There was a positive correlation between the amplitude and the RAFW area corresponding to the nadir-to-top interval (R²=0.64, P<0.05). The difference between types 2 and 3 F-waves can be explained by the difference in the RAFW area corresponding to the nadir-to-top interval of F-wave.

Keywords: atrial flutter, F-wave, electroanatomical mapping