Difference of Left Atrial Appendage Flow According to Types of Atrial Fibrillation

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Introduction: Reduced left atrial appendage flow (LAA-f) is associated with the formation of thrombus in the left atrium (LA) in patients with atrial fibrillation (AF). LAA-f is influenced by rhythm conditions; sinus rhythm (SR) or atrial fibrillation (AF). However, cardiac parameters which affect LAA-f in types of AF remain to be elucidated.

Methods: We enrolled 106 consecutive patients with 1st AF catheter ablation from June 2018 to July 2019, and 85 out of them who had the evaluation of LAA-f by trans-esophageal echocardiography before ablation were examined (68±8[SD] year-old, male/female 61/24). We divided them into two groups according to types of AF: paroxysmal AF (PAF, n=44) and persistent AF (Ps, n=41), and evaluated cardiac parameters correlated with LAA-f in the both groups.

Result: CHADS2 score was not different between the two group (1.4±1.3 vs 1.5±1.3, P=0.56). BNP level was significantly lower in PAF group compared with Ps group (67±60 vs 148±112 pg/ml, P < 0.01). In trans-thoracic echocardiography examination, LVEF was significantly larger and LA volume index (LAVI) was smaller in PAF group compared with Ps group (LVEF; 63±14 vs 55±12 % p<0.01, LAVI; 43±16 vs 58±14, P<0.001). LAA-f was significantly larger in PAF group than that in Ps group (55±21 vs 32±12 cm/sec, P=0.001). Furthermore, LAA-f had a negative correlation with LA volume index and tricuspid regurgitation pressure gradient in PAF group (r=-0.56, P=0.001 and R=-0.43, P=0.01, respectively). On the other hand, in Ps group, LAA-f had a negative correlation with BNP (r=-0.32, P<0.05), not LA volume index (P=0.26).

Conclusion: Parameters which affect LAA-f could be different according to the types of AF.