

P1912

Incidence of silent cerebral thromboembolism in catheter ablation for atrial fibrillation under the use of DOAC: Comparison of cryoballoon versus radiofrequency ablation system

A. Aso, T. Nakamura, Y. Fukuyama, S. Fukuda, K. Sibao, M. Araki, K. Meno, D. Yakebe, S. Omura, T. Mori, K. Takenaka, Y. Murasato

National Hospital Organization Kyushu Medical Center, Fukuoka, Japan

Background: Silent cerebral thromboembolism (CE) in catheter ablation for atrial fibrillation (AF) is not rare. Prior our study has reported lower incidence of silent CE in AF radiofrequency (RF) ablation using irrigated-tip catheter than conventional 4 or 8mm-tip catheter. In addition, the incidence of silent CE in AF ablation under direct oral anticoagulant (DOAC) was equivalent to continuous therapeutic warfarin. Recently pulmonary vein isolation (PVI) using cryoballoon (CB) has emerged as an alternative technique to RF ablation because some studies suggested that the efficacy for PVI by CB was equivalent to RF. However, incidence of silent CE in CB ablation under the use of DOAC is unknown.

Objective: We aimed to evaluate the incidence new silent CE in AF ablation using CB system compared with irrigated RF system under the use of DOAC.

Methods: 322 consecutive patients with paroxysmal or persistent AF (155 using CB system, 167 using RF system) who underwent the first AF ablation were taking DOAC more than one month prior to the procedure. Throughout AF ablation procedure, heparin was administered to maintain activated clotting time (ACT) between 300 and 400 seconds. Head MRI was performed in all patients within 24 hours after the procedure.

Results: In 14 (9.0%) patients using CB and in 20 (12.0%) patients using RF, head MRI showed new embolic lesions without neurological symptom ($P=0.469$). Although the amount of heparin during the procedure in group CB was significantly less than in group RF (16134 ± 3125 U vs. 18689 ± 5222 U; $P<0.0001$), amount of heparin per hour in group CB was more than in group RF (8335 ± 1955 U/h vs. 6143 ± 1918 U/h; $P<0.0001$) because procedure time in group CB was shorter than in group RF (121.3 ± 34.1 min vs. 189.5 ± 47.4 min; $P<0.0001$). Mean ACT in both groups was maintained high level (3367 ± 25.3 sec. vs. 338.6 ± 23.5 sec.; $P=0.479$). In univariate analysis, minimum ACT during procedure, as before puncture of interatrial septum, were significantly correlated with the incidence of silent CE ($P=0.027$).

Conclusions: The incidence of silent CE in AF ablation using CB system was lower than RF system, although it was not a significant difference between different ablation techniques for AF. In AF ablation, the use of CB may be preferred rather than RF as ablation system in regard to risk reduction of thromboembolic complications.