Efficacy of PVI by CRYO balloon ablation with 23mm balloon (Arctic Front Advance™) for the cases with the diameter of all the pulmonary veins less than 20mm

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Introduction: Nowadays, CRYO balloon ablation (CBA) is performed by 28mm balloon and 23mm balloon, and overwhelmingly frequently by former. But it is little reported which is more effectively performed by CRYO balloon isolation with 28mm or 23mm balloon for the cases with narrower (smaller) pulmonary vein.

Methods: This time, we evaluated the efficacy of PVI by CBA with 28mm or 23mm balloon for the case with all the pulmonary vein diameter less than 20mm. 70 cases were entered, 35 cases of 23mm balloon and 35 cases of 28mm balloon respectively. Character of each group didn't have significant differences (age, gender, BMI, duration of disease, CHADS2 score, Diameter of left atrium, left ventricular ejection fraction, BNP).

Result: PV isolation was carried out successfully in all the cases by CBA and touch up. Between the two groups there were no significant differences about total duration (203±51 VS 206±45 sec; p=n.s.) and number of times (5.0±1.5 VS 5.5±1.5; p=n.s) of CBA, but the arrival time to minus 30 degrees (31.3±5.6 VS 25.8±6.8 sec; P<0.05) and minus 40 degrees (56.6±21 vs 37.4±13 sec; P<0.05) were significantly shorter and recurrence rate was significantly lower by CBA with 23mm balloon than with 28mm balloon.

Conclusion: PVI by CBA with 23mm balloon could be more effectively performed and realize less recurrence for the cases with narrower (smaller) pulmonary vein.