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Editorial

Lessons learned from cryoballon pulmonary vein isolation in elderly patients – Should we go "cold for the old"?

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Incidence and prevalence of atrial fibrillation (AF) increases with age and occurs in >5% of patients aged over 75 years [1]. In recent years, it turned out that AF catheter ablation is superior to antiarrhythmic drug-based rhythm control [2]. Thus, catheter ablation in AF patients has become a class-I-indication in patients that remain symptomatic on antiarrhythmic therapy and can even be considered as first-line therapy [3]. However, most AF ablation trials did not include patients over 75 years of age [2,4].

The few studies on point-by-point radiofrequency (RF) ablation of AF in elderly patients show poor results, questioning this therapeutic strategy in these patients [5,6]. Moreover, in the recently presented CABANA trial patients over 75 years of age seem to fare better with drug therapy than with RF ablation [7]. In the FIRE and ICE trial pulmonary vein isolation (PVI) with the cryoballoon has been demonstrated to be non-inferior to RF ablation in paroxysmal AF patients, however patients over 75 years of age have also been excluded.

In this issue of the International Journal of Cardiology Heeger et al. present their work "Efficacy and safety of cryoballoon ablation in the elderly: A multicenter study", in which they conducted a thorough comparison of the outcome of cryoballoon ablation in patients over 75 years of age and younger patients. Patients were recruited retrospectively from three German high-volume electrophysiology centers. Primary endpoint was freedom from any atrial arrhythmia after 12 months and secondary endpoint was incidence of procedure related complications such phrenic nerve palsy, stroke, pericardial effusion or death.

To account for possible confounding factors, Heeger et al. conducted a state-of-the-art propensity score matching which resulted in very homogenous study groups, obviously except for age and the age-dependent CHA_2DS_2-Vasc-Score. Interestingly, the authors found that in elderly patients important procedural parameters such as acute PV isolation, procedure duration, fluoroscopy time or complication rate are not different between younger and elderly patients confirming that cryoballoon PVI is feasible and safe in this special patient cohort. Remarkably, AF recurrence rate after one-year follow-up with 20% in the elderly group vs. 18% in the control group was statistically not different.

The study by Heeger et al. is not the first study on cryoballoon ablation in elderly AF patients. The first report on the outcome of cryoballoon AF ablation in elderly patients already indicated that arrhythmia recurrence was low and comparable to similar studies in younger patients [8]. Further studies compared the outcome of cryoballoon AF ablation in the elderly with younger control cohorts and found similar arrhythmia recurrence and complication rates in both patient groups [9,10].

However, the study by Heeger et al. is the first multicenter study comprising the so far highest number of elderly patients undergoing AF ablation with the cryoballoon. Using propensity score matching the authors succeeded in putting together two comparable study groups. These data together with the previous published results on cryoballoon ablation in elderly patients challenge the common practice to exclude symptomatic AF patients over 75 years from cryoballoon ablation as a therapeutic option. Regarding both safety and efficacy there is no remaining evidence that 75 years of age is a justified cut-off after which cryoballoon PVI should not be considered. Nevertheless, these data do not give a clear answer whether AF ablation is the better therapeutic approach in elderly patients compared to medical therapy. In particular, recurrence of arrhythmia episodes >30 s is a scientific endpoint, which is relatively easy to determine, but might not necessarily reflect a clinically relevant finding even in younger patients. In elderly patients AF symptoms such as dyspnea and impaired exercise capacity, which often lead to hospitalization may also be attributed to other cardiac and non-cardiac conditions. Hence, to evaluate whether elderly patients have a substantial clinical benefit with reduction of AF related symptoms measured by EHRA score, hospitalization rate, or quality of life after cryoballoon ablation further studies comparing cryoballoon PVI with best medical care in these patients are needed.

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