Abstract: Atrial fibrillation catheter ablation improves the cognitive function

Authors:
MN Jin¹, TH Kim¹, KW Kang², HT Yu¹, JS Uhm¹, B Joung¹, MH Lee¹, E Kim³, HN Pak¹, ¹Yonsei University Health System, Division of Cardiology - Seoul - Korea Republic of, ²Eulji University Hospital, Division of Cardiology - Daejeon - Korea Republic of, ³Yonsei University College of Medicine, Department of Psychiatry - Seoul - Korea Republic of,

Topic(s):
Rhythm Control, Catheter Ablation

Citation:
Background: Although atrial fibrillation (AF) poses an increased risk of cognitive dysfunction, it is not clear whether catheter ablation of AF improves or worsens the cognitive function.
Purpose: This prospective case-control study sought to assess the 1-year serial changes in the cognitive function before and after catheter ablation of AF in comparison to a control group without catheter ablation.
Methods: We evaluated the Montreal Cognitive Assessment (MoCA) score in 308 patients (71.4% male, 60.6±9.1 years of age, 34.1% persistent AF) who underwent AF ablation (ablation group) and 50 AF patients on medical therapy who met the same indication for AF ablation (control group), at baseline and 3 and 12 months after AF ablation. Cognitive impairment was defined as a published cutoff score of < 23 points. To exclude any learning effects, we used the practice-adjusted reliable change index (RCI) for assessing the cognitive changes.
Results: Pre-ablation cognitive impairment was detected in 18.5% (57/308). The MoCA score significantly improved 1-year after radiofrequency catheter ablation (24.9±2.9 to 26.3±2.49, p<0.001), but not in the control group (25.4±2.4 to 24.8±2.5, p=0.069). Pre-ablation cognitive impairment (OR 13.70, 95% CI 4.83–38.87, p<0.001) was independently associated with an improvement in the 1-year post-ablation cognitive function. In the RCI analyses, 93.8% of the ablation group showed an improved/stable cognitive function at the 1-year follow up.
Conclusions: Catheter ablation of AF, at least, does not deteriorate the cognitive function, but rather improves the performance on 1-year follow-up neurocognitive tests, especially in patients with a pre-ablation cognitive impairment.
Atrial fibrillation catheter ablation improves the cognitive function

Authors: MN Jin1, TH Kim1, KW Kang2, HT Yu1, JS Uhm1, BJ Joung1, ML Lee1, E Kim3, HN Pak1
1 Yonsei University Health System, Division of Cardiology - Seoul - Korea Republic of, 2 Eulji University Hospital, Division of Cardiology - Daejeon - Korea Republic of, 3 Yonsei University College of Medicine, Department of Psychiatry - Seoul - Korea Republic of

Topic(s): Rhythm Control, Catheter Ablation

Citation: Background: Although atrial fibrillation (AF) poses an increased risk of cognitive dysfunction, it is not clear whether catheter ablation of AF improves or worsens the cognitive function. Purpose: This prospective case-control study sought to assess the 1-year serial changes in the cognitive function before and after catheter ablation of AF in comparison to a control group without catheter ablation. Methods: We evaluated the Montreal Cognitive Assessment (MoCA) score in 308 patients (71.4% male, 60.6±9.1 years of age, 34.1% persistent AF) who underwent AF ablation (ablation group) and 50 AF patients on medical therapy who met the same indication for AF ablation (control group), at baseline and 3 and 12 months after AF ablation. Cognitive impairment was defined as a published cutoff score of < 23 points. To exclude any learning effects, we used the practice-adjusted reliable change index (RCI) for assessing the cognitive changes. Results: Pre-ablation cognitive impairment was detected in 18.5% (57/308). The MoCA score significantly improved 1-year after radiofrequency catheter ablation (24.9±2.9 to 26.3±2.49, p<0.001), but not in the control group (25.4±2.4 to 24.8±2.5, p=0.069). Pre-ablation cognitive impairment (OR 13.70, 95% CI 4.83~38.87, p<0.001) was independently associated with an improvement in the 1-year post-ablation cognitive function. In the RCI analyses, 93.8% of the ablation group showed an improved/stable cognitive function at the 1-year follow up.

Conclusions: Catheter ablation of AF, at least, does not deteriorate the cognitive function, but rather improves the performance on 1-year follow-up neurocognitive tests, especially in patients with a pre-ablation cognitive impairment.

Figure 1. Comparison of cognitive changes in the total MoCA score between the ablation and control groups.