World Academy of Science, Engineering and Technology
International Journal of Medical and Health Sciences
Vol:16, No:12, 2022

Comparison of Two Strategies in Thoracoscopic Ablation of Atrial Fibrillation

Authors : Alexander Zotov, Ilkin Osmanov, Emil Sakharov, Oleg Shelest, Aleksander Troitskiy, Robert Khabazov

Abstract : Objective: Thoracoscopic surgical ablation of atrial fibrillation (AF) includes two technologies in performing of operation. 1st strategy used is the AtriCure device (bipolar, nonirrigated, non clamping), 2nd strategy is- the Medtronic device (bipolar, irrigated, clamping). The study presents a comparative analysis of clinical outcomes of two strategies in thoracoscopic ablation of AF using AtriCure vs. Medtronic devices. Methods: In 2 center study, 123 patients underwent thoracoscopic ablation of AF for the period from 2016 to 2020. Patients were divided into two groups. The first group is represented by patients who applied the AtriCure device (N=63), and the second group is - the Medtronic device (N=60), respectively. Patients were comparable in age, gender, and initial severity of the condition. Among the patients, in group 1 were 65% males with a median age of 57 years, while in group 2 – 75% and 60 years, respectively. Group 1 included patients with paroxysmal form -14,3%, persistent form - 68,3%, long-standing persistent form – 17,5%, group 2 – 13,3%, 13,3% and 73,3% respectively. Median ejection fraction and indexed left atrial volume amounted in group 1 – 63% and 40,6 ml/m2, in group 2 - 56% and 40,5 ml/m2. In addition, group 1 consisted of 39,7% patients with chronic heart failure (NYHA Class II) and 4,8% with chronic heart failure (NYHA Class III), when in group 2 – 45% and 6,7%, respectively. Follow-up consisted of laboratory tests, chest X-ray, ECG, 24-hour Holter monitor, and cardiopulmonary exercise test. Duration of freedom from AF, distant mortality rate, and prevalence of cerebrovascular events were compared between the two groups. Results: Exit block was achieved in all patients. According to the Clavien-Dindo classification of surgical complications fraction of adverse events was 14,3% and 16,7% (1st group and 2nd group, respectively). Mean follow-up period in the 1st group was 50,4 (31,8; 64,8) months, in 2nd group - 30,5 (14,1; 37,5) months (P=0,0001). In group 1 - total freedom of AF was in 73,3% of patients, among which 25% had additional antiarrhythmic drugs (AADs) therapy or catheter ablation (CA), in group 2 – 90% and 18,3%, respectively (for total freedom of AF P<0,02). At follow-up, the distant mortality rate in the 1st group was – 4,8%, and in the 2nd – no fatal events. Prevalence of cerebrovascular events was higher in the 1st group than in the 2nd (6,7% vs. 1,7% respectively). Conclusions: Despite the relatively shorter follow-up of the 2nd group in the study, applying the strategy using the Medtronic device showed quite encouraging results. Further research is needed to evaluate the effectiveness of this strategy in the long-term period.

Keywords : atrial fibrillation, clamping, ablation, thoracoscopic surgery
Conference Title : ICCCS 2022 : International Conference on Cardiology and Cardiac Surgery
Conference Location : Dubai, United Arab Emirates
Conference Dates : December 20-21, 2022