Prophylactic Radio-Frequency Ablation (RFA) before an Implantable Cardioverter Defibrillator (ICD): a retrospective cohort analysis

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Introduction: We have limited data on concurrent catheter ablation in patients undergoing an ICD.

Methods: Retrospectively, we compared the number of patients receiving appropriate ICD therapies-shock/ATPs/both after an ICD in patients who received an additional RFA (substrate homogenization) before the procedure (Group A, n=43) and the group which did not (Group B, n=64).

Result: Baseline demographic variables were comparable. Group A had patients predominantly of ischemic cardiomyopathy (high-risk substrate for SCD, 77% Vs 55%, p=0.03) and patients for secondary prevention (98% Vs 58%, p<0.001). Either group received comparable number of anti-arrhythmic drugs after the ICD implant. Though the patients who received ICD shocks, ATPs or either of them were lesser in Group A, the numbers could not reach statistical significance (24%, 19%, 30% Vs 27%, 20%, 28%, p=0.8). Similarly, the mean number of ICD shocks were considerably lower in Group A (0.37±0.8 Vs 1.2±3, p=0.055). An additional analysis of patients comprising only secondary prevention (42 Vs 27) revealed statistically significant and lesser number of ICD therapies in group A (40% Vs 74%, p=0.006) with a relative risk reduction of 46% and absolute risk reduction of 34%. The number needed to treat to prevent shocks in this subset was 2.9. A regression analysis in the whole cohort revealed that ARVC was the only predictor of a patient receiving an ICD shock.

Conclusion: Our data reveals significantly lesser number of ICD therapies (shocks or ATPs) post-implant in patients for secondary prevention, who also received a concurrent prophylactic RFA. The implications of this finding are numerous and must encourage multi-center RCTs in large numbers to address the research question. Reference: Atti V et al. Prophylactic catheter ablation of ventricular tachycardia in ischemic cardiomyopathy: a systematic review and meta-analysis of randomized controlled trials. Journal of Interventional Cardiac Electrophysiology 2018;53(2);207-15