

Effect of Modest Weight Loss on Recurrence of Atrial Fibrillation After Catheter Ablation: A Systematic Review and Meta-Analysis

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BACKGROUND

Studies have demonstrated that modest weight loss (>10% of body weight) leads to improved atrial fibrillation (AF) burden, event frequency and episode duration. Whether modest (>10%) weight loss may contribute to improved outcomes of catheter ablation (CA) in obese patients with AF, remains to be elucidated.

METHODS

A systematic search was conducted by 2 independent researchers in MEDLINE and EMBASE for studies comparing recurrence of AF after CA in obese patients undergoing >10% weight loss to <10% or no weight loss in the peri-procedural period of CA. Arrhythmia recurrence was considered as the number of patients with recurrence of atrial fibrillation at maximum follow-up period of included studies. In addition, we also performed sub-group analysis of arrhythmia recurrence at less than 12 months, and more than 12 months after CA. Mantel-Haenszel risk ratios (random effects model) were calculated with 95% confidence interval (CI); for heterogeneity I² statistics were reported.

RESULTS

A total of 6 observational studies with 770 patients were included. There was a non-statistically significant trend towards decreased arrhythmia recurrence in >10% weight loss cohort compared to <10% weight loss at maximum follow-up (RR=0.69, CI: 0.43-1.09, p=0.11). Sub-group analysis showed statistically significant decrease in arrhythmia recurrence in >10% weight loss cohort if follow-up was extended beyond 12 months after CA (RR=0.49, CI: 0.31-0.80, p=0.004), while there was no difference between patients with >10% weight loss and <10% weight loss if follow-up period was less than 12 months (RR=0.82, CI: 0.35-1.93).

Obese patients undergoing catheter ablation for AF have an increased risk of AF recurrence after ablation as compared to general population

Modest weight loss (>10%) appears to decrease recurrence of atrial fibrillation after catheter ablation in obese patients

Patients should be encouraged to undergo weight loss to improve outcomes after catheter ablation of atrial fibrillation

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CONCLUSION

Modest weight loss (>10% of body weight) appears to decrease the recurrence of atrial fibrillation in obese patients after catheter ablation. The effect on recurrence appears to be significant during long-term follow-up, which can be explained by sustained improvement in cardiovascular risk factors after weight loss. Randomized controlled trials are needed to validate these results.

ARRHYTHMIA RECURRENCE

AF Recurrence at Maximum Follow-up

RR=0.69; CI: 0.43-1.09, p=0.11

AF Recurrence at <12 Months

RR: 0.82; CI: 0.35-1.93; p=0.65

AF Recurrence at >12 Months

RR=0.49; CI: 0.31-0.80, p=0.004

DISCLOSURE INFORMATION

The authors report no conflict of interest relevant to the content of this presentation