

ATRIAL FIBRILLATION

Weight loss reduces AF burden

Obesity is independently associated with atrial fibrillation (AF). A short-term study has previously shown that weight loss can reduce symptomatic AF burden, but whether this benefit is sustained in the long term is unclear. The LEGACY investigators evaluated the long-term effect of weight loss and weight fluctuation on heart rhythm in overweight patients with AF.

The LEGACY study included patients with paroxysmal or persistent AF with a BMI ≥ 27 kg/m². Participants were counselled on the importance of weight loss using a preplanned motivational and goal-directed programme involving both dieting and physical activity. To evaluate the effect of dose-response on AF burden, weight loss was split into three groups: $\geq 10\%$ weight loss (group 1); 3–9% weight loss (group 2); and $< 3\%$ weight loss (group 3). The primary outcome measure was AF symptom, defined using the AF Severity Scale, and freedom from AF, which was measured using 7-day Holter monitoring.

In total, 355 patients were enrolled into the study: 135 in group 1, 103 in group 2, and 117 in group 3. Weight loss in groups 1 and 2 significantly reduced numerous cardiac risk factors, including systolic blood pressure, LDL-cholesterol and triglyceride levels, and inflammatory markers, and improved glycaemic control. Most of these risk factors had increased in patients in group 3. Improvements in the frequency, duration, symptoms, and symptom severity of AF were observed in group 1 and group 2, compared with group 3 ($P < 0.001$).

At final follow-up, 45.5% of group 1, 22.2% of group 2, and 13.4% of group 3 were free from AF, and did not need intervention with antiarrhythmic drugs or ablation. Total arrhythmia-free survival rates were 86.2% in group 1, 65.5% in group 2, and 39.6% in group 3 ($P < 0.001$). Notably, $> 5\%$ weight fluctuation resulted in twice the risk of recurrent arrhythmia compared with $< 2\%$ weight fluctuation, which remained significant after adjusting for baseline weight.



“The current study demonstrates that these beneficial effects on AF burden persist during long-term follow up, is dose-dependent, but partially offset in the face of significant weight-fluctuation,” conclude the authors. “We observed beneficial effects of weight loss on blood pressure, diabetic control, lipid profile and inflammation, all of which may have contributed to reduction in AF burden.”

Karina Huynh

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