Left atrial ablation is commonly used for the treatment of atrial fibrillation (AF). Among most patients undergoing ablation, the purpose of the procedure is to improve symptoms. Two large randomized clinical trials have shown that ablation is more effective than medications for improving symptoms and quality of life (QOL). However, there is reason for caution in translating these results to individual patients in clinical practice. Neither study included a sham-procedure control group. In the context of prior evidence of a lack of association between QOL and binary measures of AF recurrence, this raises the possibility that AF ablation affects symptoms through a placebo effect or alternative mechanisms, such as cardiac denervation, rather than arrhythmia suppression. Furthermore, randomized clinical trial results may not be generalizable to real-life practice, given the large influence that clinical factors, operator factors, and patient comorbidities have on the safety and efficacy of ablation. To ensure that AF ablation has a direct and generalizable benefit for QOL improvement, an association between arrhythmia suppression and QOL must be established and a standard for success after ablation in routine clinical practice must be identified.

In the current issue of JAMA Network Open, Terricabras et al address the association between postablation AF recurrence and QOL in a secondary analysis of the Substrate and Trigger Reduction for AF–Part II (STAR AF II) trial. In STAR AF II, investigators randomized patients to 1 of 3 ablation strategies: pulmonary vein isolation (PVI) alone, PVI plus ablation of complex fractionate electrograms, or PVI plus linear lesions. They evaluated postablation AF recurrence using 24-hour Holter monitors at intervals of 3, 6, 9, 12, and 18 months as well as a combination of weekly and symptom-triggered transmissions using a transtelephonic rhythm monitor. Researchers assessed changes in QOL, as measured by the Short-Form Health Survey (SF-36). All groups experienced a statistically and clinically significant improvement in QOL with catheter ablation. Notably, higher QOL was associated with a reduction in AF burden and not with a dichotomous measure of the absence of AF episodes lasting longer than 30 seconds (a standard definition used in ablation-related research). A threshold reduction in AF burden of 70% was associated with a significant improvement in QOL.

The current findings should be considered in the context of 3 preceding trials: the Catheter Ablation vs Antiarrhythmic Drug Therapy for Atrial Fibrillation (CABANA) trial, the Catheter Ablation Compared With Pharmacological Therapy for Atrial Fibrillation (CAPT-AF) study, and the Comparison of Efficacy of Phased Multipolar vs Traditional Radiofrequency Ablation (CAPCOST) trial. In CABANA, the authors found that catheter ablation, compared with medical therapy, significantly improved QOL as measured by several validated tools. Similarly, the CAPT-AF study assessed QOL, as measured by SF-36, for catheter ablation vs medical therapy and found a greater improvement in QOL in the ablation group. CABANA and CAPT-AF investigators did not specifically study the relationship between improvement in QOL and AF burden and/or recurrence and could not exclude placebo effect, given the absence of a sham-procedure group. In addition to STAR AF II, this uncertainty was addressed by investigators in the just-published CAPCOST study, in which the relationship between AF burden and QOL was evaluated among patients randomized to 1 of 2 catheter ablation techniques: a novel multielectrode technology vs conventional radiofrequency. Both STAR AF II and CAPCOST evaluated the association between AF suppression and QOL only...
among patients undergoing ablation, eliminating placebo effect as a potential confounder. Like STAR AF II, patients in CAPCOST who had a low postablation AF burden experienced improved QOL.4

There are limitations that should be considered. First, the authors assessed QOL only with SF-36, which was developed and validated in a general population. Other assessment tools have been designed to evaluate QOL specifically among individuals with AF ablation, including the AF Effect on Quality of Life questionnaire,5 the Mayo AF-Specific Symptom Inventory,6 and the AF Severity Scale.7 In comparison with these AF-specific tools, the SF-36 is not disease specific and therefore may be less sensitive in this population. Second, the assessment of AF burden in the current study was limited to intermittent ambulatory rhythm monitoring. Compared with more rigorous methods of determining AF burden, such as continuous monitoring using an implantable loop recorder, this assessment of AF burden may have underestimated the true AF burden. Nonetheless, there are no data to define optimum rhythm monitoring intervals, and it is also possible that both STAR AF II and CAPCOST may have used more intensive ambulatory monitoring protocols than are necessary, possible, or cost-effective for routine surveillance in clinical practice.

The association between QOL improvement and AF burden reduction after ablation in the current study and in CAPCOST emphasizes the importance of appropriately defining procedural success. With limited exceptions, the purpose of AF ablation is symptom relief. In this context, defining successful AF ablation as freedom from any AF episode of more than 30 seconds’ duration is inappropriate because this metric does not accurately reflect QOL improvement. On the other hand, a notable reduction in overall AF burden has now been well correlated with improvement in QOL and can be easily assessed using commercially available, noninvasive rhythm monitors.

The work of Terricabras et al3 proves the direct association between symptom improvement and AF suppression after ablation and validates the role of AF burden assessment as an easily measurable surrogate for formal evaluation of QOL after ablation. This approach can be used to systematically assess outcomes and confirm ablation benefits in real-life practice. STAR AF II reinforces our belief that for AF ablation, nothing succeeds like success; reducing AF burden by at least 70% leads to improved symptoms and quality of life.

ARTICLE INFORMATION
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REFERENCES

