Safety and Benefit of Discontinuing Statin Therapy in the Setting of Advanced, Life-Limiting Illness:

A Randomized Clinical Trial

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Abstract

IMPORTANCE—For patients with limited prognosis, some medication risks may outweigh the benefits, particularly when benefits take years to accrue; statins are one example. Data are lacking regarding the risks and benefits of discontinuing statin therapy for patients with limited life expectancy.

OBJECTIVE—To evaluate the safety, clinical, and cost impact of discontinuing statin medications for patients in the palliative care setting.

DESIGN, SETTING, AND PARTICIPANTS—This was a multicenter, parallel-group, unblinded, pragmatic clinical trial. Eligibility included adults with an estimated life expectancy of between 1 month and 1 year, statin therapy for 3 months or more for primary or secondary prevention of cardiovascular disease, recent deterioration in functional status, and no recent active cardiovascular disease. Participants were randomized to either discontinue or continue statin therapy and were monitored monthly for up to 1 year. The study was conducted from June 3, 2011, to May 2, 2013. All analyses were performed using an intent-to-treat approach.

INTERVENTIONS—Statin therapy was withdrawn from eligible patients who were randomized to the discontinuation group. Patients in the continuation group continued to receive statins.

MAIN OUTCOMES AND MEASURES—Outcomes included death within 60 days (primary outcome), survival, cardiovascular events, performance status, quality of life (QOL), symptoms, number of nonstatin medications, and cost savings.

RESULTS—A total of 381 patients were enrolled; 189 of these were randomized to discontinue statins, and 192 were randomized to continue therapy. Mean (SD) age was 74.1 (11.6) years, 22.0% of the participants were cognitively impaired, and 48.8% had cancer. The proportion of participants in the discontinuation vs continuation groups who died within 60 days was not significantly different (23.8% vs 20.3%; 90% CI, −3.5% to 10.5%; *P* = .36) and did not meet the noninferiority end point. Total QOL was better for the group discontinuing statin therapy (mean McGill QOL score, 7.11 vs 6.85; *P* = .04). Few participants experienced cardiovascular events (13 in the discontinuation group vs 11 in the continuation group). Mean cost savings were $3.37 per day and $716 per patient.

CONCLUSIONS AND RELEVANCE—This pragmatic trial suggests that stopping statin medication therapy is safe and may be associated with benefits including improved QOL, use of fewer nonstatin medications, and a corresponding reduction in medication costs. Thoughtful patient-provider discussions regarding the uncertain benefit and potential decrement in QOL associated with statin continuation in this setting are warranted.

Table 1
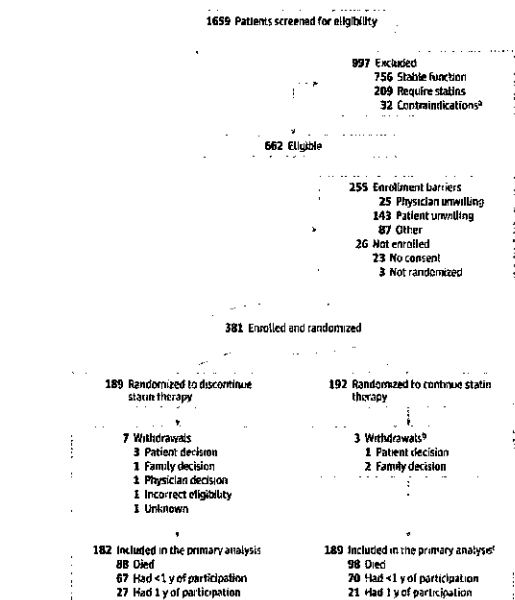
Participant Characteristics

Figure 1. CONSORT Flow Diagram
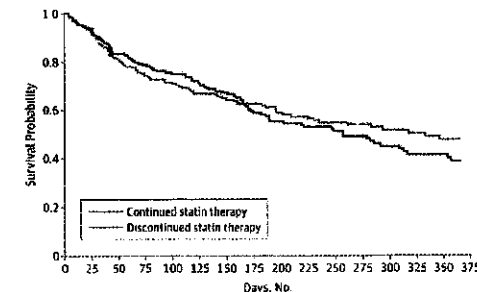A total of 189 patients were randomized to discontinue statin therapy and 192 were randomized to continue therapy.
[a] Contraindications to continuing or discontinuing statin therapy.
[b] Distribution of withdrawals between study arms; *P* = .85.
[c] Distribution of outcomes between study arms; *P* = .58.

Figure 2. Product-Limit Survival Estimates
The 90% confidence bands are indicated. Light gray shading indicates the 90% confidence bands for the continuation arm of the study; light brown shading, the 90% confidence bands for the discontinuation arm of the study.
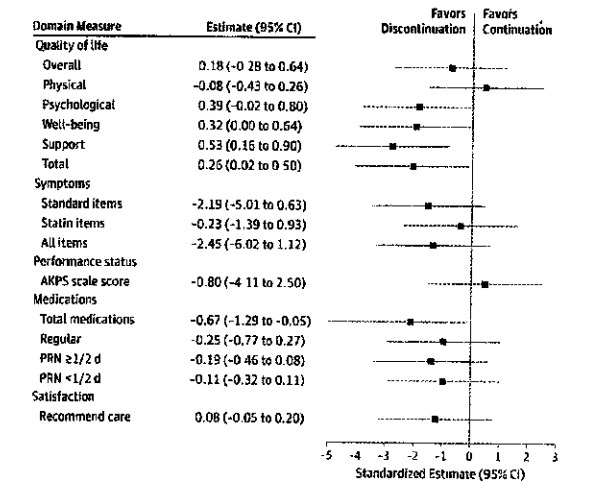

Figure 3. Summary of Patient-Reported Outcomes
In this visual summary of Table 3, the estimates and 95% CIs are presented using standardized units so that the CI widths are comparable; results favoring discontinuation of statin therapy are aligned on the left side of zero. The numeric estimates and 95% CIs are presented in the units of the actual analyses, thereby aligning with Table 3. AKPS indicates Australia-Modified Karnofsky Performance Status; PRN, administered as needed.

Table 2

Patient-Reported Outcomes

Table 3

Cost Savings Associated With Statin Therapy Discontinuation