

Does stopping a statin increase the short-term risk of a cardiovascular event?

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EVIDENCE-BASED ANSWER

When hydroxymethyl glutaryl coenzyme A (HMG CoA) inhibitors (statins) are stopped by asymptomatic patients, there appears to be no increased risk of cardiovascular events (strength of recommendation

[SOR]: **B**). However, for patients who have recently experienced a cardiovascular event, discontinuation of statins increases the risk of further events and death (SOR: **B**).

CLINICAL COMMENTARY

Rely on low-tech skills, like shared decision-making, to improve adherence

One might hope that all patients taking statins would have excellent compliance, given these drugs' well-established benefit. Unfortunately, long-term adherence remains suboptimal, and patients are going to stop their statins.¹ A Canadian study² found that patients aged >65 years, with and without recent acute coronary syndrome (ACS), had low rates of adherence to statins 2 years after initiation of therapy (40.1% for ACS, 36.1% for chronic coronary artery disease, and 25.4% for primary prevention). A recent Cochrane review³ found small improved adherence despite attempted intervention (range improvement: -3% to 25%). They

concluded no intervention aimed at improving adherence to lipid-lowering drugs can be recommended over another, given the limited effects.

Clinicians are left to rely on low-tech skills, such as focusing on the patient's perspective and shared decision-making, to improve their patients' adherence. This focus is especially important for those who had a recent cardiovascular event. Nevertheless, it is reassuring that this review did not find significantly increased harm after abrupt stopping of statins among stable patients without recent ACS.

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Evidence summary

The benefits of statin therapy appear to extend beyond the realm of their cholesterol-lowering properties.⁴ These benefits, such as reduction in post-myocardial infarction (MI) deaths and reinfarctions, are seen quickly after initiation of therapy. Other drugs, such as aspirin and beta-blockers, have also been

shown to improve early outcomes when started after cardiovascular events, although waiting until the patient is hemodynamically stable to initiate beta-blockade reduces the risk of cardiogenic shock.⁵ If standard agents are either not started or withdrawn after a cardiovascular event, patients are at increased risk of harm.^{6,7}

FAST TRACK**High-risk patients who had their statins withheld had increased rates of heart failure, arrhythmia, shock, and death**

Physiological research. Studies of patients with stroke and those with only risk factors for cardiovascular disease show that platelet activity is increased when statins are discontinued.^{8,9} Additionally, tissue plasminogen activator levels are decreased after discontinuation of statins, resulting in a relatively hypercoagulable state.¹⁰ Animal studies of stroke in mice showed mice whose statin was abruptly stopped had more damage from stroke than those whose statin was continued.¹¹

High-risk cardiovascular patients. Preliminary human data suggested that stopping statins increased risk of recurrent events for patients who recently had a primary cardiovascular event. One retrospective case-control study evaluated 4870 patients who had statin therapy withdrawn on admission to the hospital for non-ST segment elevation MI (NSTEMI). Patients who had their statins withheld had increased rates of heart failure, arrhythmia, shock, and death (hazard ratio=2.32; 95% confidence interval [CI], 2.02–2.67).¹² A post-hoc analysis of data from the PRISM trial found that among the 86 patients who were admitted for chest pain and had their statin withdrawn, a higher rate of death and nonfatal MI was observed, compared with the 379 patients whose statins were continued (hazard ratio=2.93; 95% CI, 1.64–6.27). This effect was seen in the first week and was independent of cholesterol levels and measures of severity of illness.¹³

Low-risk cardiovascular patients. A post-hoc analysis of the washout period of a prospective study of 9473 asymptomatic outpatients who were previously taking statins showed that for these lower-risk patients, similar rates of cardiovascular events could be expected during withdrawal (any statin) or initiation of atorvastatin therapy. The monthly event rate during the discontinuation phase was 0.20% and during initiation was 0.26% ($P=NS$).¹⁴

Recommendations from others

Currently, no expert panels or specialty bodies make recommendations regarding how or when to discontinue statins. The

Institute for Clinical Systems Improvement recommends that all patients with chronic stable coronary artery disease should be considered for statin use regardless of their lipid levels; however, no mention of discontinuing statins is made.¹⁵

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