

Initiation of Lipid-Lowering Medication in the Hospital: Does It Predict Long-Term Use?

Aronow HD, Novaro GM, Lauer MS, et al. In-hospital initiation of lipid-lowering therapy after coronary intervention as a predictor of long-term utilization: a propensity analysis. *Arch Intern Med* 2003;163:2576–82.

Study Overview

Objective. To examine the relationship between in-hospital initiation of lipid-lowering medication following a coronary intervention and persistent use at 6 months.

Design. Retrospective propensity-matched cohort study.

Setting and participants. Data from patients who participated in a 1995 clinical trial of abciximab at the time of coronary artery intervention were analyzed. Of the 2792 adult patients in the overall study undergoing percutaneous coronary revascularization, the 175 patients who were discharged from the hospital on lipid-lowering therapy were matched with 477 patients discharged without lipid-lowering medication based on their propensity to be discharged on lipid-lowering medication.

Main outcome measures. Self-reported use of a lipid-lowering medication at 30 days and 6 months following discharge.

Main results. Among all patients not previously on lipid-lowering therapy, 81% and 77% of patients discharged on lipid-lowering therapy reported taking a lipid-lowering medication at 30 days and 6 months compared with 13% and 25% of patients who were not discharged on medication (relative risk [RR] for comparison at 6 months, 3.17 [95% confidence interval {CI}, 2.88–3.41]; $P < 0.001$). After limiting analysis to the propensity-matched groups and adjusting results to account for the propensity to be started on lipid-lowering medication in the hospital and other confounding variables, use of lipid-lowering medication at 6 months was still much higher in patients initiated on treatment before discharge (RR, 2.50 [95% CI, 2.29–2.65]; $P < 0.001$).

Conclusion. Beginning lipid-lowering medication during hospitalization for coronary revascularization is a strong predictor of medication use at 6 months.

Commentary

Despite the ability of lipid-lowering treatment to reduce cardiovascular morbidity and mortality in patients with coro-

nary heart disease, secondary prevention strategies are underused. Approaches aimed at increasing the use of effective therapies are needed.

The study by Aronow et al demonstrates that patients discharged from the hospital without lipid-lowering medication rarely were using this important treatment 6 months later. The use of propensity matching and multivariable adjustment suggests that the effect the authors observed is truly due to the timing of treatment initiation. There could be some unmeasured confounding since patients were classified as having or not having hypercholesterolemia, but their exact lipid levels were not accounted for, and patients' willingness to use lipid-lowering medication was not measured. Still, the effect they observed is very large and appears to be altered only slightly by restricting the analysis to matching patients and using multivariate adjustment.

There is even stronger evidence now than there was in 1995 to justify in-hospital initiation of lipid-lowering therapy at the time of coronary revascularization or other cardiac events. Cholesterol-lowering with atorvastatin started at the time of an acute coronary event appeared to be beneficial, even in the short-term [1]. Knowledge of steady-state cholesterol levels for patients with known coronary disease also may be less important when deciding on medical therapy in patients at very high risk, since the benefits of lipid lowering may be more closely related to overall cardiovascular risk than to pretreatment cholesterol levels. The benefit of using simvastatin has recently been observed in high-risk patients with a wide range of initial cholesterol values, including a large group of patients with an initial low-density lipoprotein cholesterol level less than 116 mg/dL [2].

Initiation of treatment, unfortunately, is not enough. Aronow's findings also tell us that 19% of patients started on lipid-lowering treatment in the hospital stopped in the first month postdischarge, and almost a quarter of patients had stopped using it at 6 months.

Applications for Clinical Practice

Clinicians should consider initiation of lipid-lowering medication for each coronary disease patient during hospitalization

to improve the use of this effective treatment. Since a large number of patients stop taking their lipid-lowering medication, follow-up visits are an important time to reinforce the need for long-term medication use and to address obstacles to treatment.

—Review by Stephen D. Persell, MD, MPH

References

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2. Heart Protection Study Collaborative Group. MRC/BHF Heart Protection Study of cholesterol lowering with simvastatin in 20,536 high-risk individuals: a randomised placebo-controlled trial. *Lancet* 2002;360:7–22.

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