

Discontinuation of medications 1 month after an acute myocardial infarction increased risk for death at 12 months

Ho PM, Spertus JA, Masoudi FA, et al. Impact of medication therapy discontinuation on mortality after myocardial infarction. Arch Intern Med. 2006;166:1842-7.

Clinical impact ratings: GIM/FP/GP ★★★★★☆ Cardiology ★★★★★☆☆

QUESTION

Does discontinuation of medications 1 month after an acute myocardial infarction (MI) increase risk for death at 12 months?

METHODS

Design: Cohort study (Prospective Registry Evaluation Myocardial Infarction: Event and Recovery [PREMIER]).

Setting: 19 academic centers, inner-city hospitals, single-payer systems, and nonuniversity hospitals in the United States.

Patients: 2498 patients \geq 18 years of age (mean age 60 y, 71% men, 79% white) who had biomarker evidence of myocardial necrosis within 24 hours of admission or who were transferred to the hospital within 24 hours of onset of symptoms and had acute MI (ischemic signs, symptoms for $>$ 20 min, or electrocardiographic ST changes).

Risk factors: Discontinuation of 1 or more of 3 evidence-based medications (aspirin, β -blocker, or statins) at 1 month after MI. Results were adjusted for age, sex, race, educational level, marital status, smoking status, diabetes, hypercholesterolemia, hypertension, heart failure, coronary heart disease, revascularization during index hospitalization, type of MI, social support, avoidance of medication because of cost, and site of enrollment.

Outcome: Death at 12 months.

MAIN RESULTS

Patients who discontinued all 3 medications at 1 month were at greater risk for death at 12 months than were patients who continued use of \geq 1 medication (adjusted hazard ratio [HR] 3.81, 95% CI 1.88 to 7.72), 1 or 2 medications (HR 5.00, CI 1.85 to 13.5),

or all 3 medications (HR 3.33, CI 1.52 to 7.14). Patients who discontinued all medications were older; had more comorbid conditions; and were less likely to be married, white, have completed high school, or have coronary revascularization during the index hospitalization.

CONCLUSION

Discontinuation of medications 1 month after an acute myocardial infarction was associated with increased risk for death at 12 months.

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COMMENTARY

Nonadherence to drug therapy is clearly associated with adverse events. Ho and colleagues showed that discontinuation of 3 proven therapies (statins, β -blockers, and aspirin) 1 month after discharge was associated with increased risk for death in patients hospitalized for MI. Discontinuation was common, with 1 of 3 patients stopping a drug within a month after discharge.

The central issue is whether discontinuation causes death, with adverse outcomes related to either the loss of the cardioprotective effects or a harmful withdrawal effect from such medications as β -blockers (1). However, strong evidence supports an alternate hypothesis that the behavior of nonadherence itself is strongly linked to adverse events and death. Adherence to placebo alone has been associated with a strong reduction in mortality (odds ratio 0.56), and conversely, patients who are nonadherent have poor outcomes (2). This phenomenon has been observed for $>$ 25 years (3).

Regardless of the mechanism for this association, patients who are nonadherent are at higher risk for death than those who take medica-

tions as prescribed. Low income, impaired health, adverse events, or other factors may contribute to poor adherence not only to medications but also to lifestyle interventions to improve diet and exercise or to stop smoking. Interventions designed to improve overall adherence to all of these positive measures might benefit such patients.

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