

# An intensive smoking cessation intervention reduced mortality in high-risk smokers with cardiovascular disease

Mohiuddin SM, Mooss AN, Hunter CB, et al. Intensive smoking cessation intervention reduces mortality in high-risk smokers with cardiovascular disease. *Chest*. 2007;131:446-52.

**Clinical impact ratings:** GIM/FP/GP ★★★★★☆ Hospitalists ★★★★★☆ Cardiology ★★★★★☆ Pulmonology ★★★★★☆

## QUESTION

In high-risk smokers hospitalized for cardiovascular disease, does an intensive behavioral plus pharmacotherapy smoking cessation intervention after discharge plus usual care reduce mortality and hospital admissions more than usual care alone?

## METHODS

**Design:** Randomized controlled trial.

**Allocation:** {Not concealed}†.\*

**Blinding:** Unblinded.\*

**Follow-up period:** 2 years.

**Setting:** Coronary care unit in a university hospital in Nebraska, USA.

**Patients:** 209 patients 30 to 75 years of age (mean age 55 y, 63% men) who were admitted to the coronary care unit with the acute coronary syndrome or decompensated heart failure, had smoked for  $\geq 5$  years, and had a Fagerstrom score  $> 7$ . Exclusion criteria included current alcohol or illicit substance addiction.

**Intervention:** Intensive smoking cessation intervention plus usual care ( $n = 109$ ) or usual care only ( $n = 100$ ). The intensive intervention included weekly 60-minute counseling sessions for  $\geq 3$  months after discharge and individualized nicotine replacement therapy and/or bupropion at no cost. Intervention-group patients were re-treated if they started smoking again. Usual care

included written self-help materials and a 30-minute counseling session before discharge.

**Outcomes:** Point prevalence (no smoking since the previous follow-up visit) and continuous abstinence (no smoking since the first follow-up visit) quit rates (both confirmed by measurement of expired carbon monoxide), mortality, and hospital admission.

**Patient follow-up:** 96% (intention-to-treat analysis).

## MAIN RESULTS

The intensive-intervention group had higher quit rates than the usual-care group throughout the follow-up period and at 2 years (Table). The intensive intervention led to

fewer hospital admissions and lower all-cause mortality (Table).

## CONCLUSION

In high-risk smokers hospitalized with cardiovascular disease, an intensive smoking cessation intervention reduced hospital admissions and all-cause mortality more than usual care only.

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*For correspondence:* Dr. D.E. Hilleman, Creighton University Cardiac Center, Omaha, NE, USA, E-mail hilleman@creighton.edu. ■

\*See Glossary.

†Information provided by author.

## Intensive smoking cessation intervention plus usual care vs usual care only in high-risk smokers hospitalized for cardiovascular disease at 2 years†

Outcomes	Intensive intervention plus usual care	Usual care only	RBI (95% CI)	NNT (CI)
Point prevalence quit rate	39%	9%	338% (132 to 752)	4 (3 to 6)
Continuous abstinence quit rate	33%	9%	267% (91 to 621)	5 (3 to 8)
<b>RRR (CI)</b>				
All-cause mortality	2.8%	12%	77% (27 to 93)	11 (6 to 41)
Cardiovascular mortality	2.8%	9%	69% (-1.1 to 91)	Not significant
All-cause hospital admissions	23%	41%	44% (16 to 63)	6 (4 to 19)
Cardiovascular hospital admissions	18%	37%	50% (21 to 69)	6 (4 to 16)

‡Abbreviations defined in Glossary. RBI, RRR, NNT, and CI calculated from data in article.

## COMMENTARY

This small but well-designed clinical trial by Mohiuddin and colleagues found that a smoking cessation program increased quit rates and reduced hospitalizations and mortality in high-risk cardiac patients. Several aspects of the cessation intervention deserve comment. First, although the Joint Commission on Accreditation of Healthcare Organizations quality initiatives encourage U.S. hospitals to identify and intervene in smokers admitted with acute cardiac syndromes, few provide the 30-minute inpatient counseling session described here. Second, the intervention included weekly counseling for 3 months after discharge. Outpatient counseling is unavailable or not covered for most Americans. In 2005, only 14 states covered cessation counseling for all Medicaid recipients and only 1 state (Oregon) covered all forms of counseling and medication (1). Third, medications, which probably doubled quit rates (2), were provided to patients free of charge, and 75% of patients in the intervention group took advantage of them. Fourth, multiple opportunities for re-treatment were allowed. We know that tobacco dependence is a chronic, relapsing condition, and  $> 25\%$  of the intervention group were re-treated during the study period.

This landmark study calls to mind the first study of lipid lowering that showed a significant reduction in mortality and forever changed clinical practice (3). Even if we ignore the effect on mortality, the costs to identify and intervene in smokers are minimal compared with hospitalization costs. The study should serve as a call to all payers, public and private, to reevaluate their coverage for intensive tobacco cessation interventions. Physicians need to advocate for increasing coverage and decreasing barriers to effective smoking cessation treatments.

Charles J. Bentz, MD, FACP  
Providence, St. Vincent Hospital and Medical Center  
Portland, Oregon, USA

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