Blood Pressure and Cholesterol Lowering in Persons without Cardiovascular Disease


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Abstract

BACKGROUND

Elevated blood pressure and elevated low-density lipoprotein (LDL) cholesterol increase the risk of cardiovascular disease. Lowering both should reduce the risk of cardiovascular events substantially.

METHODS

In a trial with 2×2 factorial design, we randomly assigned 12,701 participants at intermediate risk who did not have cardiovascular disease to receive a combination of 10 mg per day or placebo, and to add simvastatin (10 mg per day) or placebo. All analyses reported here, were performed to assess the benefit of simvastatin and the two antihypertensive agents in the 2×2×2 factorial design with 3,180 participants assigned to the four arms. Among the participants assigned to the four arms, the primary outcome was the composite of death from cardiovascular causes, non-fatal myocardial infarction, or non-fatal stroke, and the principal endpoint was the benefit of simvastatin and the two antihypertensive agents in the 2×2×2 factorial design with 3,180 participants assigned to the four arms.

RESULTS

The decrease in LDL, increased risk of 1.8% in the low-density lipoprotein (LDL) cholesterol level and the increase in diastolic blood pressure were all reduced. The decrease in systolic blood pressure with combined therapy was not different from the placebo arms. The benefit of simvastatin and the two antihypertensive agents in the 2×2×2 factorial design with 3,180 participants assigned to the four arms. The principal endpoint was the benefit of simvastatin and the two antihypertensive agents in the 2×2×2 factorial design with 3,180 participants assigned to the four arms.

CONCLUSIONS

The combination of monotherapy (10 mg per day of simvastatin) and combined therapy (10 mg per day of simvastatin and 10 mg per day of blood pressure) was associated with a significantly lower rate of cardiovascular events than placebo. The principal endpoint was the benefit of simvastatin and the two antihypertensive agents in the 2×2×2 factorial design with 3,180 participants assigned to the four arms. (Funded by the Canadian Institutes of Health Research and AstraZeneca, ClinicalTrials.gov number, NCT0040923.)

Keywords

High-risk factors, Trial, Prevention, Mortality, Meta-analysis, Intervention, Countries, Strategy, Stroke, Adults

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Blood pressure and cholesterol lowering in persons without cardiovascular disease


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Methods: The study was a randomized clinical trial of 11,108 participants without cardiovascular disease who were randomized to: (1) conventional treatment, and (2) intensive treatment. The intensive treatment was achieved by a combination of diet, exercise, and pharmacotherapy. The primary outcome was the composite of death from cardiovascular causes, nonfatal myocardial infarction, or stroke, and the secondary outcome was a composite of death from any cause, nonfatal myocardial infarction, or stroke. The median follow-up was 5.5 years. RESULTS: The incidence of the primary outcome was 0.7% per year in the conventional group and 0.3% per year in the intensive group (adjusted hazard ratio 0.59; 95% confidence interval 0.41 to 0.83). The incidence of nonfatal myocardial infarction or stroke was 0.2% per year in the conventional group and 0.1% per year in the intensive group (adjusted hazard ratio 0.45; 95% confidence interval 0.28 to 0.73). CONCLUSIONS: The intensive treatment strategy was associated with a significantly lower risk of cardiovascular events than the usual treatment strategy in persons at intermediate risk who did not have cardiovascular disease. Copyright © 2018 Canadian Medical Association.