Polypill Strategy in Secondary Cardiovascular Prevention

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Abstract

Background: A polypill that includes key medications associated with improved outcomes (aspirin, angiotensin-converting-enzyme [ACE] inhibitor, and statin) has been proposed as a simple approach to the secondary prevention of cardiovascular death and complications after myocardial infarction.

Methods: In this phase 3, randomized, controlled clinical trial, we assigned patients with myocardial infarction within the previous 6 months to a polypill-based strategy or usual care. The polypill treatment consisted of aspirin (100 mg), ramipril (2.5, 5, or 10 mg), and atorvastatin (20 or 40 mg). The primary composite outcome was cardiovascular death, nonfatal type 1 myocardial infarction, nonfatal ischemic stroke, or urgent revascularization. The key secondary end point was a composite of cardiovascular death, nonfatal type 1 myocardial infarction, or nonfatal ischemic stroke.

Results: A total of 2499 patients underwent randomization and were followed for a median of 36 months. A primary-outcome event occurred in 118 of 1237 patients (9.5%) in the polypill group and in 156 of 1229 (12.7%) in the usual-care group (hazard ratio, 0.76; 95% confidence interval [CI], 0.60 to 0.96; P = 0.02). A key secondary-outcome event occurred in 101 patients (8.2%) in the polypill group and in 144 (11.7%) in the usual-care group (hazard ratio, 0.70; 95% CI, 0.54 to 0.90; P = 0.005). The results were consistent across prespecified subgroups. Medication adherence as reported by the patients was higher in the polypill group than in the usual-care group. Adverse events were similar between groups.

Conclusions: Treatment with a polypill containing aspirin, ramipril, and atorvastatin within 6 months after myocardial infarction resulted in a significantly lower risk of major adverse cardiovascular events than usual care. (Funded by the European Union Horizon 2020; SECURE ClinicalTrials.gov number, NCT02596126; EudraCT number, 2015-002868-17.).

What is one of the key medications included in the polypill for secondary prevention?

- A) Clopidogrel
- B) Angiotensin-converting enzyme (ACE) inhibitor

What was the defined period for patient eligibility based on their myocardial infarction?

- A) Within the previous 3 months
- B) Within the previous 6 months

How many primary-outcome events occurred in the polypill group?

- A) 118
- B) 156

What percentage of patients in the usual-care group experienced a primary outcome event?

- A) 11.7%
- B) 12.7%

What aspect of medication adherence was notably higher in the polypill group?

- A) Patient-reported adherence
- B) Physician-assessed adherence

What statistical method was used to express the comparison of outcomes between the groups?

- A) Confidence interval
- B) Hazard ratio

Which factor was stated as similar between both treatment groups?

- A) Medication adherence
- B) Adverse events

What was the purpose of the study as outlined in the background?

- A) To evaluate a new surgical intervention
- B) To assess the effectiveness of a polypill in secondary prevention of cardiovascular events

What was the significant finding related to the key secondary outcome?

- A) No difference in outcomes between groups
- B) A lower incidence in the polypill group

What funding source was mentioned for the study?

- A) National Institutes of Health
- B) European Union Horizon 2020