SPECIAL ARTICLE

Summary of the Clinical Studies Reported in the Scientific Session of the American College of Cardiology 2006 (Atlanta, Georgia, USA, 11-14 March 2006)

In the annual scientific sessions of the 55th Congress of the American College of Cardiology, corresponding to 2006, preliminary results of late breaking clinical trials were presented. Thus, the findings of studies of particular importance could be quickly made available.

What follows is a brief summary of the objectives, methods, and results of these studies as presented orally. Given that many of them have yet to be published in their full version, the information given here should be considered as preliminary. If the results of a study have been published in full when these summaries reach the reader, we recommend that the reader consults the publication, which will normally have been written directly in English.

SUMMARY BY TOPICS

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EPIDEMIOLOGY

REACH (Reduction of Atherothrombosis for Continued Health) Registry

Presented by Deepak L. Bhatt, Ohio, United States of America

See full publication in JAMA. 2006;295:180-9.

Background. Atherothrombosis is the leading cause of cardiovascular disease and mortality throughout the world. No international database has yet characterized the profile of risk factors for arteriosclerosis or the aggressiveness of treatment in patients with atherothrombosis. The aim of this study was to determine whether the prevalence of risk factors and treatment of this disease show comparable patterns in different countries.

Methods. The REACH registry collected data on risk factors for arteriosclerosis and its treatment. Between 2003 and 2004, the study included 67 888 patients aged 45 years or more from 5473 clinics in 44 countries. All patients presented with vascular disease (coronary artery disease, n=40 258; cerebrovascular disease, n=18 843; peripheral vascular disease, n=8273) or 3 or more risk factors for atherothrombosis (n=12 389). The prevalence of risk factors, treatments used, and degree of control of risk factors were recorded.

Results. Patients with atherosclerosis throughout the world have a similar profile of risk factors: a high proportion had hypertension (81.8%), hypercholesterolemia (72.4%), and diabetes (44.3%).

The prevalence of overweight subjects (39.8%), obese subjects (26.6%), and morbidly obese subjects (3.6%) was similar in most geographic regions, but was highest in the United States of America (overweight subjects, 37.1%; obese subjects, 36.5%; and morbidly obese subjects 5.8%; *P*<.001 vs other regions). In general, patients were undertreated with statins (69.4% for the whole population; range, 56.4% for cerebrovascular disease to 76.2% for coronary artery disease), antiplatelet agents (78.6% for the whole population; range, 53.9% for ≥3 risk factors to 85.6% for coronary artery disease), and other evidence-based risk-reduction therapies. Current smokers accounted for a substantial proportion of patients with vascular disease (14.4%). Undertreated hypertension (50.0% with high blood pressure at baseline), undiagnosed hyperglycemia (4.9%), and high fasting glucose concentrations (36.5% in patients not previously diagnosed as diabetics) were also common. Among those with symptomatic atherosclerosis, 15.9% had symptomatic disease in multiple vascular territories.

Conclusions. This large and up-to-date international database shows that the traditional cardiovascular risk factors are consistent for and common to all countries, that they are widely undertreated, and that these factors are largely uncontrolled in many parts of the world.

PRIMARY AND SECONDARY PREVENTION

HOPE-2 (Heart Outcomes Prevention Evaluation) Study

Presented by Eva M. Lonn, Hamilton, Canada

See full publication in Can J Cardiol. 2006;22:47-53.

Background. The results of epidemiological studies have suggested that homocysteine is a risk marker for cardiovascular diseases. Treatment with folic acid and vitamin Bs reduces the concentration of homocysteine by 25% to 30%. The objective of the HOPE-2 study was to evaluate the long-term effects of treatment with vitamins on the incidence of cardiovascular events in patients with previous cardiovascular disease or diabetes.

Methods. Between January and December 2000, a total of 5522 patients (28% women), aged 55 years or more, with preexisting cardiovascular disease and/or diabetes, along with other risk factors, were randomized to receive daily treatment with a combination of folic acid (2.5 mg), vitamin B_6 (50 mg), and vitamin B_{12} (1 mg), or placebo. Mean follow-up lasted for 5 years. The primary outcome was a composite of cardiovascular death, myocardial infarction, and stroke.

Results. At the time of inclusion in the study, the mean age of patients was 69 years, 83% had a history of cardiovascular disease, 15% had prior cerebral stroke or transient ischemic attack, 55% had hypertension, 40% had diabetes, 64% had dyslipidemia, and 10% were current smokers. The median baseline concentration of homocysteine was 11.2 µmol/L (interquartile range, 9.3-13.8 µmol/L), although this concentration varied from region to region. The mean decrease in homocysteine after 2 years was 3.8 µmol/L. The main results corresponding to 95% of the assigned events with 99% of the data completed are shown in Table.

Conclusions. Despite reducing the concentration of homocysteine by approximately 25%, no apparent benefit was observed in the treatment with folic acid and vitamin Bs, except for a significant reduction in the incidence of stroke. Subsequent studies should aim to verify the effect observed for cerebrovascular accident. Treatment had no effect on cancer rates or mortality.

These results are in line with those of the Norwegian Vitamin Trial (NORVIT), which also failed to detect any significant effect on cardiovascular events despite achieving a reduction in the concentrations of homocysteine in patients with ST-elevation myocardial infarction.

TABLE. **Main Findings of the HOPE-2 Study***

Outcome	Active Group (n=2758)	Placebo Group (n=2764)	Relative Risk (95% CI)	*P*
Myocardial infarction, stroke, and cardiovascular death	509 (18.5%)	541 (19.6%)	0.94 (0.83-1.06)	.32
Myocardial infarction	333 (12.1%)	348 (12.6%)	0.96 (0.83-1.12)	.61
Stroke	115 (4.2%)	150 (5.4%)	0.77 (0.60-0.98)	.03
Cardiovascular death	261 (9.5%)	282 (10.2%)	0.93 (0.79-1.10)	.39
All-cause mortality	461 (16.7%)	473 (17.1%)	0.98 (0.86-1.11)	.73
Cancer	320 (11.6%)	306 (11.1%)	1.05 (0.90-1.23)	.55
Death due to cancer	79 (2.9%)	80 (2.9%)	0.99 (0.73-1.35)	.95

*CI indicates confidence interval.