multivessel disease. Approximately 95% of subjects in both groups underwent primary PCI. There was a trend toward more frequent use of ventricular assist devices in the BAT group (7.4% of patients vs 3.7% in the IABP group; p=0.053); however, the duration of mechanical ventilation, the number of days in the intensive care unit, the number of subjects receiving renal replacement therapy, and the time to hemodynamic stabilization did not differ.

At 30 days, 119 patients in the IABP group (39.7%) and 123 patients in the control group (41.3%) had died (RR with IABP, 0.96; 95% CI, 0.79 to 1.17; p=0.69). An analysis of prespecified post hoc subgroups showed no benefit for IABP based on sex, age, diabetes, or hypertension status, blood pressure (<80 vs ≥80 mm Hg), ST-segment elevation myocardial infarction (STEMI) versus non–STEMI, or previous history of MI. The groups did not differ significantly with respect to the rates of major bleeding (3.3% vs 4.4%, respectively; p=0.51), peripheral ischemic complications (4.3% vs 3.4%; p=0.53), sepsis (15.7% vs 20.5%; p=0.15), or stroke (0.7% and 1.7%; p=0.28) [Thiele H et al. *N Engl J Med* 2012].

Concerning the secondary endpoints and process-of-care measures, there was an early trend toward improved SAP-II scores in the IABP group but this did not persist beyond Day 4. There was no benefit with respect to renal function or serum lactate in the IABP group and no difference in C-reactive protein levels.

Prof. Thiele concluded that while IABP support in cardiogenic shock is safe, it does not improve 30-day mortality in patients with cardiogenic shock complicating AMI who underwent early revascularization in the IABP-SHOCK II trial.

STEMI Mortality Decreases in France While Some Key Risk Factors Increase

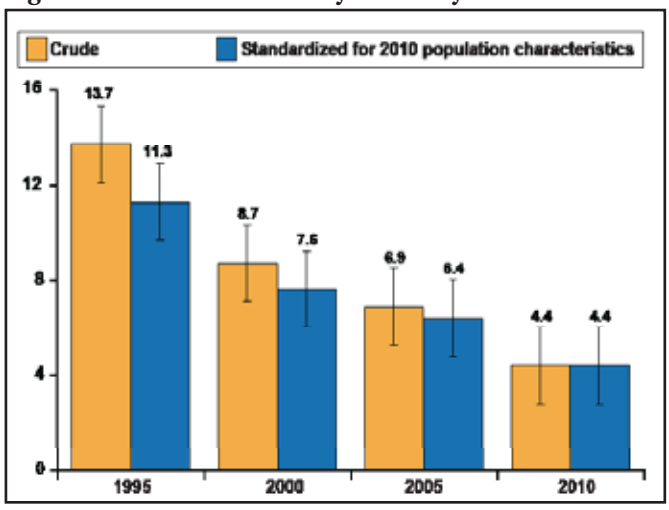
Written by Lori Alexander

The overall rate of cardiovascular (CV) mortality among patients with ST-segment elevation myocardial infarction (STEMI) in France has decreased 68% over the past 15 years, but the profile of patients hospitalized for STEMI has changed, with a higher prevalence of younger patients with no comorbidities or history of CV disease. The change has occurred especially among women, with the proportion of women <60 years with STEMI doubling from 1995 to 2010. Increases in smoking and obesity in that population seem to be the cause, said Nicolas Danchin, MD, Hospital European Georges Pompidou, Paris, France, who reported the findings.

Prof. Danchin and his colleagues reviewed data from 4 nationwide French registries (USIK 1995, USIC [Unite´ de Soins Intensifs Coronaires] 2000, FAST-MI [French Registry of Acute Coronary Syndrome With or Without ST Elevation; NCT00673036] 2005, and FAST-MI 2010 [NCT01237418]), with 1-month surveys conducted every 5 years from 1995 to 2010. Lower mortality rates associated with STEMI have been attributed to improved interventions, but the investigators hypothesized that temporal changes in patient characteristics may have also played a role in the mortality decline.

The study, which was published to coincide with its presentation at the European Society of Cardiology Congress [Puymirat E et al. *JAMA* 2012], included data from 6707 patients with STEMI who were admitted to an intensive care or cardiac care unit. The primary endpoint of the study was 30-day all-cause mortality. The crude 30-day mortality decreased from 13.7% to 4.4%, and the standardized mortality decreased from 11.3% to 4.4% (Figure 1). In a multivariate analysis, mortality decreased consistently from 1995 to 2010 after controlling for clinical characteristics such as age, sex, body-mass index, risk factors, CV history, and use and type of reperfusion therapy. The odds ratio for mortality was 0.39 (95% CI, 0.29 to 0.53; p<0.001) in 2010 compared with 1995.

Figure 1. Evolution of 30-Day Mortality.



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The average age of patients with STEMI in France significantly decreased (from 66.2 years in 1995 to 63.3 years in 2010; p<0.001). The greatest change occurred among women, with the proportion of women <60 years with STEMI increasing from 11.8% in 1995 to 25.5% in 2010 (p<0.001).

Many other patient characteristics changed significantly over the 15 years; most notably the percentage of current smokers (32.0% to 40.9%; p<0.001) and the rate of obesity (14.3% to 20.1%; p<0.001). These increases were greater

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among women than among men, especially for women <60 years, among whom smoking increased from 37.3% to 73.1% and obesity increased from 17.6% to 27.1%. Prof. Danchin noted that these findings indicate the crucial need to target future preventive measures toward younger women. Overall, significantly fewer patients had a CV history (p<0.001), but significantly more had typical risk factors, such as hypertension (p=0.006) and hypercholesterolemia (p=0.001) compared with 15 years ago.

The study also demonstrated significant increases in the use of reperfusion therapy compared with 15 years ago, with the rate of percutaneous coronary intervention increasing from 11.9% to 60.8% (p<0.001). The use of evidence-based interventions within the first 48 hours, such as treatment with β-blockers, angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, and statins, also increased significantly (p<0.001). In addition, the time from onset of symptoms to first medical contact significantly decreased over time (p<0.001). All of these factors likely contribute to the decreasing mortality rate observed over time.

Filippo Crea, MD, PhD, Institute of Cardiology, Catholic University of the Sacred Heart, Rome, Italy, noted that the study had several strengths, but its weaknesses included potential bias related to a prevalent inclusion of large-volume hospitals and a lack of information on infarct size, microvascular obstruction, and ejection fraction at discharge; and lack of follow-up data on recurrence of acute coronary events.

Results from the PURE Study

Written by Maria Vinall

Results from the Prospective Urban Rural Epidemiology [PURE] study, presented by Salim Yusuf, MD, McMaster University, Hamilton, Ontario, Canada, indicated that different strategies are needed to influence health behaviors in countries, depending upon their socioeconomic status. In relatively low-income countries, key strategies include making healthy foods accessible and affordable, and promoting smoking cessation. Among relatively more high-income/industrialized countries, efforts should be focused on increasing physical activity and decreasing fat consumption, while continuing to promote smoking cessation.

Diet, physical activity, and smoking account for 50% to 60% of the risk for cardiovascular disease (CVD) [Yusuf S et al. *Lancet* 2004; Tu JV. *Lancet* 2010]; however, these factors vary markedly both across and within countries, due to environmental and societal factors. The PURE study was designed to create an understanding of these factors in order to develop contextually appropriate strategies for CVD prevention.

The PURE study was comprised of 153,996 individuals (aged 35 to 70 years; 42.1% men) from 348 urban and 280 rural communities in 17 low-, middle-, and high-income countries for whom data on diet, physical activity, and smoking were collected during 2003-2010. Validated food frequency questionnaires were used to record diet; physical activity (recreational and nonrecreational/obligatory) was collected using the International Physical Activity Questionnaire. These factors, plus smoking prevalence (ever, current, and quitting) were then related to country gross domestic product (GDP; World Bank statistics) and household wealth (wealth index) overall and separately for individuals from urban and rural areas.

Results from the PURE study showed that among those living in low-income countries there is less consumption of fruits, vegetables, proteins and fats, and a higher consumption of carbohydrates, which researchers attributed to the affordability of different foods. Activity levels were higher in low-income countries due to a higher level of obligatory physical activities (mostly work and transportation-related). Smoking was also more prevalent among individuals in low-income countries. As country GDP increased, there was an increased consumption of fruits and vegetables, accompanied by a higher percentage of energy obtained from total (but not saturated) fats and proteins, with a lower percentage of energy from carbohydrates. Physical activity declined with increasing GDP mostly because of a marked decline in obligatory/nonrecreational activity that was not compensated for by an increase in recreational physical activity. In all categories studied, the association of household wealth to diet, physical activity, and quitting smoking were similar to that observed for GDP.

"Policies to prevent CVD need to focus on different aspects of lifestyle among the rich versus the poor and between rich and poor countries," said Prof. Yusuf. "In particular, healthy foods need to become more affordable."

PURE: Treatment and Control of Hypertension

Written by Lori Alexander

Hypertension is a global epidemic; yet rates of awareness, treatment, and control are lower than expected around the world, according to the results of the Prospective