Second MIs Are Becoming Rarer, Less Deadly

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STOCKHOLM — The marked decline in the incidence of first MI and the improved rate of survival after its occurrence constitute one of the great medical success stories of recent decades. But what about second MIs? Are they also decreasing in incidence and lethality?

The answer is a resounding yes, based on the findings of two studies presented at the annual congress of the European Society of Cardiology. The studies captured highly favorable trends in first and second MIs in Scotland and Denmark, two places with comprehensive national medical record-keeping.

Niamh Murphy, M.D., used the Scottish Linked Record Database to analyze all 110,226 hospitalizations for a first MI and 9,664 admissions for a second MI in Scotland during 1990-2000. She found that the hospitalization rate for a first MI declined by 29% over the decade. The decline in hospitalization rate for a second MI was more impressive—it was down by 59%, which is testimony to the great strides made in secondary prevention during that period. The median time between a first and second MI was 2.3 years in men and 4.8 years in women. Overall survival after a first MI was 8.8 years in men and 4.3 years in women. Survival after a second MI was considerably shorter—an average of 3.6 years in men and 1.8 years in women, said Dr. Murphy of the Western Infirmary, Glasgow.

During the same period, overall mortality after a first MI was 20.1% at 1 month, 28.4% at 1 year, and 44.7% at 5 years. Mortality was substantially worse after a second MI: 24.5% at 1 month, 38.3% at 1 year, and 60.2% at 5 years.

Advanced age was a powerful risk factor for mortality. For example, men older than 84 years at their first MI were more than 15-fold more likely to die within 30 days than were those with a first MI before the age of 55 years. Age also affected mortality after a second MI, but to a lesser extent.

After adjustment for age, gender, comorbid illnesses, and other potential confounders, the 30-day case fatality rate after a first MI fell by 38% in men and by 24% in women. The decline in 30-day mortality after a second MI was smaller and not statistically significant. However, the decline in adjusted 5-year mortality after a second MI was more robust: 29% in men and 17% in women. During the same period, adjusted 5-year mortality after a first MI fell by 27% in men and 23% in women, Dr. Murphy said. However, despite the dramatic decline in recent years in the rate of second MIs and the substantial drop in the associated fatality rate, the prognosis after a second MI remains considerably worse than it does after the first.

"This last finding underscores the importance of using all available evidence-based therapies to prevent recurrent events in patients who've experienced a first MI," Dr. Murphy stressed.

In a separate presentation, Pernille Buch, M.D., reported on all 167,260 patients diagnosed with a first MI in Denmark during 1985-2002. One-year mortality after hospitalization for a first MI declined steadily throughout the study period, from 39% in the first 5 years of the study, during 1985-1989, to 25% during 2000-2002, the last 3 years of the study. (The researchers used the 3-year period because the change in 2003 of the definition of acute MI disrupted longitudinal epidemiologic studies.)

There was an even more pronounced reduction in mortality among the 5,363 patients who experienced recurrent MI within 30 days of their first MI. During the 1985-1989 period, the 1-year mortality following such an event was 49%; by the 2000-2002 period, it had dropped to 18%, according to Dr. Buch of Bispebjerg University Hospital, Copenhagen.

Most of the improved prognosis after recurrent MI during the 17-year study period came from a marked decline in mortality during the first week after the event. During 1985-1989, patients who had a recurrent MI within 30 days of a first MI were 14-fold more likely to die within the next 7 days, compared with patients who didn't have a second MI. By the 2000-2002 period, they were only fivefold more likely to die within a week, compared with those without a recurrent MI.

Likewise, patients with recurrent MI during 1985-1989 were 5-fold more likely to die during days 8-60 than were those who did not have a second MI, but by 2000-2002, they were at only 1.8-fold increased risk of death during the same time period. ■