Divergent Trends in Stroke and Myocardial Infarction Incidence and Case-Fatality (A New Jersey Statewide Study)

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Background: Mortality due to stroke and coronary heart disease has declined during the last two decades. However, patterns of incidence and case fatality of these two conditions have not been examined closely.

Methods: We examined the crude and age-adjusted incidence and case fatality of first hospitalized stroke (N=239,898) in New Jersey during 1994 to 2006 using the Myocardial Infarction Data Acquisition System (MIDAS) and contrasted these trends to those with AMI in the same database during the same study period. Incidence was adjusted to the 1994 New Jersey population age distribution.

Results: Crude stroke incidence decreased by 30% from 445 in 1994 to 306 per 100,000 in 2006. Age- and sex-adjusted incidence also decreased by 31% from 445 to 296 per 100,000. The magnitude of the decline in incidence was positively associated with age. The decrease was largest among persons aged 85 and older (44.6%), with smaller declines in other age groups (75-84: 41.0%, 65-74:38.0%, 55-64:23.7%). However, the stroke incidence increased in the youngest (30-54) age group by 22.8%. In-hospital case fatality due to stroke declined from 11.1% in 1994 to 6.2% in 2006. This decline was observed in all age and gender groups. In contrast, during the same study period, the incidence of acute myocardial infarction increased only among persons aged 85 and older (+12%) and decreased in the youngest age group (-14%).

Conclusions: While there has been an overall decrease in the incidence of hospitalized stroke, a disturbing increase was observed in younger individuals (below age 55). This age-specific increase was not observed in AMI. The reason for these divergent trends is not yet known.